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Department of Energy

Ohio Field Office
Fernald Closure Project
175 Tri-County Parkway
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(513) 648-3155

NOV 2 3 2004

DOE-0053-05

Mr. James A. Saric, Remedial Project Manager
United States Environmental Protection Agency
Region V, SR-6J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Mr. Bill Kurey
United States Fish & Wildlife Service, Suite H
6950 American Parkway
Reynoldsburg, OH 43068

Dear Mr. Saric, Mr. Schneider, and Mr. Kurey:

TRANSMITTAL OF RESPONSES TO COMMENTS FROM THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY AND OHIO ENVIRONMENTAL PROTECTION AGENCY ON THE DRAFT COMPREHENSIVE LEGACY MANAGEMENT AND INSTITUTIONAL CONTROLS PLAN, JULY 2004

References:
1) Letter, J. Saric to J. Reising, "Legacy Management and Institutional Controls Plan" dated September 28, 2004

2) Letter, T. Schneider to W. Taylor, "Comments – Draft CLM & IC Plan"

3) W. Taylor to J. Saric, T. Schneider, B. Kurey, "Request – Comprehensive Legacy Management and Institutional Controls Plan," dated October 26, 2004.

Enclosed for your review are the responses to the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) comments on the Draft Comprehensive Legacy Management and Institutional Controls Plan (LMICP), July 2004.

Comments were received on all five documents that make up the LMICP, the Legacy Management Plan (Volume 1), the Institutional Controls Plan (Volume 2), the Operations and

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Maintenance Master Plan for the Aquifer Restoration and Wastewater Project (Attachment A), the Post-Closure Care and Inspection Plan (Attachment B), and the Groundwater/Leak Detection and Leachate Monitoring Plan (Attachment C). Some of the comments were discussed with the Office of Legacy Management in order to provide responses that were compatible with what OLM is planning for the future of legacy management at the site. The revised LMICP is due to the agencies no later than February 28, 2005, per DOE's extension request, dated October 26, 2004.

If you have any questions, please do not hesitate to contact Johnny Reising at (513) 648-3139.

Sincerely,

Johnny Reising

for William J. Taylor
Director

FCP:Reising

Enclosure: As Stated

cc w/ enclosure:
J. Reising, OH/FCP
G. Stegner, OH/FCP
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cc w/o enclosure:
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RESPONSES TO U.S. AND OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE DRAFT COMPREHENSIVE LEGACY MANAGEMENT AND INSTITUTIONAL CONTROLS PLAN, JULY 2004

FERNALD CLOSURE PROJECT
FERNALD, OHIO

NOVEMBER 2004

U.S. DEPARTMENT OF ENERGY

RESPONSES TO U.S. ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE DRAFT COMPREHENSIVE LEGACY MANAGEMENT AND INSTITUTIONAL CONTROLS PLAN, JULY 2004

FERNALD CLOSURE PROJECT

SPECIFIC COMMENTS - VOLUME 1 – LEGACY MANAGEMENT PLAN

1. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 1.1 Page #: 2 Line #: NA Code: C
Original Specific Comment #: 1
Comment: The text states that legacy management activities related to maintenance of the remedies will include monitoring and maintenance of the On-Site Disposal Facility (OSDF). The text should be revised to state that monitoring and maintenance will also be performed for (1) the Converted Advanced Waste Water Treatment (CAWWT) Facility and supporting infrastructure, (2) the extraction wells and associated piping and utilities of the groundwater restoration system, and (3) the active outfall line to the Great Miami River.
Response: The CAWWT, the extraction wells and associated piping and the active outfall line (AOL) will all still be functioning in a remediation capacity. Monitoring and maintenance of those systems will be necessary and will be conducted under the Office of Legacy Management's (OLM) oversight. The details of the monitoring and maintenance activities of these systems will be included in the Operations and Maintenance Master Plan (OMMP) and associated operational/maintenance procedures. The OMMP is Attachment A to the Comprehensive Legacy Management and Institutional Controls Plan (LMICP), and will govern the operations/maintenance of those systems.
Action: The text will be revised to include the CAWWT, extraction wells and associated piping, and the AOL as part of what gets managed and maintained during legacy management. Reference will be made to the OMMP for the details of monitoring and maintenance.

2. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 1.3.5 Page #: 8 Line #: NA Code: C
Original Specific Comment #: 2
Comment: The text states that site inspection will include inspections of the OSDF cap, leachate and leak detection system, and perimeter areas of the site. The text should be revised to include inspections of (1) the CAWWT Facility and supporting infrastructure, (2) the groundwater restoration system, and (3) the active outfall line to the Great Miami River
Response: The CAWWT, the extraction wells and associated piping and the AOL will all still be functioning in a remediation capacity. Inspections of those systems will be necessary and will be conducted by operations and maintenance personnel under OLM's oversight. The details of the inspections of these systems will be included in the OMMP and associated operational/maintenance procedures. The OMMP is, Attachment A to the LMICP and will govern the operations of those systems.
Action: The text will be revised to include the CAWWT, extraction wells and associated piping, and the AOL as part of what gets inspected during legacy management. Reference will be made to the OMMP for the details of the inspections.

3. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.3.1 Page #: 13 Line #: NA Code: C
Original Specific Comment #: 3
Comment: The text states that Operable Unit 5 (OU 5) consists of all environmental media, including soil, surface water, groundwater, and vegetation. The text should be revised to include sediment as an OU 5 environmental medium.
Response: Agree.
Action: Text will be revised to include sediment as environmental media.

4. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.0 Page #: 20 Line #: NA Code: C
Original Specific Comment #: 4
Comment: Section 3.0 states that maintaining institutional controls at the Fernald Closure Project (FCP) site will be a fundamental component of legacy management and will include ensuring that no residential or agricultural uses are made of the site. However, the text does not address recreational uses such as hunting, fishing, camping, and swimming that may or may not be allowed at the site after its closure. The text should be revised to address recreational uses that may or may not occur at the FCP site after its closure and how they will be controlled, restricted, or prohibited.
Response: The text in Volume 2, Section 2.1.1, page 7 currently contains a list of restricted activities that will be enforced as part of the Institutional controls. Swimming is currently listed as a prohibited activity in Section 2.1.1. Restrictions on public hunting and camping will be added to the text. A final decision on whether to allow public fishing on the FCP will depend on the outcome of the interim residual risk assessment planned following closure. The path forward regarding a decision on fishing at the FCP will be added to the text. The NRD settlement is expected to identify any other public use of the FCP.
Action: The text will be revised as noted above. Reference to the NRD settlement negotiations will also be added, if agreement has not been reached by the February 2005 revision.

5. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.0 Page #: 21 Line #: NA Code: C
Original Specific Comment #: 5
Comment: Section 3.0 states that legacy management activities related to maintenance of the remedies will include monitoring and maintenance of the OSDF. The text should be revised to state that monitoring and maintenance will also be performed for (1) the CAWWT Facility and supporting infrastructure, (2) the extraction wells and associated piping and utilities of the groundwater restoration system, and (3) the active outfall line to the Great Miami River. Also, new subsections should be added to Section 3.0 that discuss the specific legacy management activities that will be performed for the CAWWT Facility and supporting infrastructure, the groundwater restoration system, and the active outfall line to the Great Miami River.
Response: See Comment Response # 1.
Action: See Action for Comment Response # 1.

6. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.2 Page #: 22 Line #: NA Code: C
Original Specific Comment #: 6
Comment: Section 3.2 discusses surveillance and maintenance of restored areas. Section 3.2 should be revised to state that restored areas will be inspected to ensure that recreational uses of the FCP site such as hunting, fishing, camping, and swimming are being controlled, restricted, or prohibited.
Response: Agree. Text should clearly state that inspections would be performed to ensure prohibited actions are not occurring on Fernald property. However, decisions have not yet been reached regarding which public use activities will be allowed are still being discussed. The NRD settlement is expected to provide additional detail regarding public use at the FCP.
Action: Text will be clarified as noted above. Text will also be revised to include further information regarding prohibited actions and recreational activities once decisions on those issues have been finalized (See also Comment Response # 4.).

7. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.4 Page #: 24 Line #: NA Code: C
Original Specific Comment #: 7
Comment: Section 4.4 discusses reports that will be generated on an annual basis. Section 4.4 should be revised to include reports on the monitoring and maintenance activities that will be conducted for the OSDF, the CAWWT Facility, the groundwater restoration system, and the active outfall line to the Great Miami River.

Response: Agree in part. Routine monitoring and maintenance will be performed on the systems outlined above as is mentioned in the text. Currently, the performance of the aquifer restoration well field, water treatment facilities and the OSDF leak detection monitoring program are reported via the IEMP reporting process. Given that the IEMP is being incorporated into the LMICP, it is anticipated that the IEMP reporting process will continue to be utilized for some period of time beyond the 2006 site closure date. Note that reporting of maintenance activities on the water treatment facilities/infrastructure and well field is not specifically reported now. The Operable Unit 5 Record of Decision established performance measures for aquifer restoration and water treatment will remain in force until the groundwater remedy is completed. Monitoring and maintenance requirements are specified in the IEMP and OMMP, respectively. The OMMP and IEMP are Operable Unit 5 Remedial Design Work Plan specified documents and will therefore continue to govern the operational, maintenance, monitoring and reporting aspects of the groundwater remedy and associated infrastructure (i.e., well field, treatment plant and pipelines).

Action: DOE will continue to use the IEMP and OMMP to specify monitoring, reporting, operation and maintenance of the groundwater remedy. DOE will continue to use the IEMP reporting process for OSDF leak detection monitoring program. DOE will discuss appropriate process for making OSDF cap maintenance and monitoring reports available to the U.S. EPA. The agreed-upon process should then be documented in the next version of the LMICP.

8. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.5 Page #: 25 Line #: NA Code: C
Original Specific Comment #: 8
Comment: Section 4.5 discusses Comprehensive Environmental Response, Compensation, and Liability Act 5-year reviews and states that the 5-year review report will include summaries of inspections conducted at the FCP site, including inspections of the OSDF. Section 4.5 should be revised to state that the 5-year review report will include summaries of the inspections conducted for the OSDF, the CAWWT Facility, the groundwater restoration system, and the active outfall line to the Great Miami River.
Response: Agree.
Action: Text will be revised as suggested.

9. Commenting Organization: U.S. EPA Commentor: Saric
Section #: Table 6-1 Page #: 32 Line #: NA Code: C
Original Specific Comment #: 9
Comment: Table 6-1 discusses data needed to support future legacy management activities. Table 6-1 should be revised to discuss (1) aerial photographs, (2) groundwater extraction data, and (3) design and monitoring data for the CAWWT.
Response: Agree.
Action: Additional information suggested will be included in Table 6-1

10. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 7.0 Page #: 33 Line #: NA Code: C
Original Specific Comment #: 10
Comment: Section 7.0 discusses legacy management costs and refers to the cost estimate in Appendix A. The text of Section 7.0 should be revised to discuss legacy management activities for the CAWWT Facility and the active outfall line to the Great Miami River. Also, the cost estimate in Appendix A should be revised to include costs for the legacy management activities for the active outfall line to the Great Miami River.
Response: Agree. Section 7.0 states the "continuing groundwater remediation and all associated activities on-going post-closure" are included in the cost estimate. The CAWWT and the active outfall line are included in those activities and will be included in the estimate.
Action: Section 7.0 will be revised to include a more detailed estimate, including the CAWWT and the active outfall line.

SPECIFIC COMMENTS - VOLUME 2 – INSTITUTIONAL CONTROLS PLAN

11. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 1.4 Page #: 5 Line #: NA Code: C
Original Specific Comment #: 1
Comment: Section 1.4 discusses controls to minimize human and environmental exposure to residual contaminants. Section 1.4 should be revised to state how recreational uses of the FCP site such as hunting, fishing, camping, and swimming will be controlled, restricted, or prohibited.
Response: Agree.
Action: Section 1.4 will be revised to address methods of controlling, restricting or prohibiting recreational activities on the site once decisions about restricted activities have been finalized. (See also Comment Responses # 4 and 6.)

12. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.1.1 Page #: 7 Line #: NA Code: C
Original Specific Comment #: 2
Comment: Section 2.1.1 lists examples of land use restrictions for the FCP site. Section 2.1.1 should be revised to clearly state whether recreational uses such as hunting, fishing, camping, and swimming will be controlled, restricted, or prohibited, at the site.
Response: Future recreational uses of the site are still being discussed/considered. Camping and swimming will not be permitted. It is not envisioned that public hunting and fishing will be permitted. The NRD settlement is expected to resolve permitted public uses of the FCP.
Action: The text will be revised to accurately reflect final decisions regarding recreational activities, once they have been finalized. (See also Comment Responses # 4, 6, and 11.)

13. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.1.3.3 Page #: 9 Line #: NA Code: C
Original Specific Comment #: 3
Comment: Section 2.1.3.3 discusses routine inspections of the FCP site and refers to a checklist in Appendix D. The text and the checklist in Appendix D should be revised to discuss routine inspections that will be conducted for the CAWWT Facility, the groundwater restoration system, and the active outfall line to the Great Miami River. Also, the text and the checklist in Appendix D should include inspections to verify that recreational uses such as hunting, fishing, camping, and swimming are being controlled, restricted, or prohibited at the site.
Response: Details regarding the inspections of the CAWWT and the groundwater restoration system are included in the OMMP. The active outfall line will be monitored annually from now until closure as will be specified in the OMMP. The annual inspections will continue beyond the 2006 closure date until the line is decommissioned. Refer to Comment Response # 7 for additional information regarding monitoring/maintenance of the water treatment facility and associated infrastructure.
Action: The text will be revised to identify where detailed information may be obtained for the CAWWT and groundwater restoration system. Also, the text and the table in Appendix D will be revised to add the inspection of the proper controls on recreational behavior/activities.

14. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.1.1 Page #: 14 Line #: NA Code: C
Original Specific Comment #: 4
Comment: Section 3.1.1 discusses FCP site inspections and refers to the checklist in Appendix D. The text and the checklist in Appendix D should be revised to discuss routine inspections that will be conducted for the CAWWT Facility, the groundwater restoration system, and the active outfall line to the Great Miami River. Also, the text and the checklist in Appendix D should include inspections to verify that recreational uses such as hunting, fishing, camping, and swimming are being controlled, restricted, or prohibited, at the site.
Response: See Comment Response # 13.
Action: See Action for Comment Response # 13.

15. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 5.1 Page #: 25 Line #: NA Code: C
Original Specific Comment #: 5
Comment: Section 5.1 discusses inspection data and public access to information for the FCP site. Section 5.1 should be revised to include a subsection called "Monitoring Data" that discusses groundwater and surface water monitoring data for the site.
Response: Both surface water and groundwater monitoring and data reporting are covered in the IEMP. It is anticipated that Revision 4 of the IEMP will be included as an attachment in the February 2005 revision of the LMICP. If Revision 4 of the IEMP is not completely finalized or approved, the IEMP will be included as an attachment to the LMICP in January 2006. As indicated, an update of the LMICP will occur in January 2006 prior to closure.
Action: As indicated in the response.

16. Commenting Organization: U.S. EPA Commentor: Saric
Section #: Page #: Line #: NA Code: C
Original Specific Comment #: 6
Comment: Throughout Volume 1 and the attachments reference is made to the IEMP for additional monitoring detail. The IEMP is an implementing document for much monitoring requirements and as such should be included as an attachment to this document. This would further create a one stop document for all post closure activities. Finally, the reporting currently included in the Site Environmental Report should be incorporated in the annual reporting under the IC Plan.
Response: In Volume 2, p. 26, Section 5.3 it is stated that the IEMP will be included as an attachment to the final version of the LMICP. It is anticipated that Revision 4 of the IEMP will be included as an attachment in the February 2005 revision of the LMICP. If Revision 4 of the IEMP is not completely finalized or approved, the IEMP will be included as an attachment to the LMICP in January 2006. As indicated, an update of the LMICP will occur in January 2006 prior to closure.
Action: As indicated in the response.

RESPONSES TO OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE DRAFT COMPREHENSIVE LEGACY MANAGEMENT AND INSTITUTIONAL CONTROLS PLAN, JULY 2004

FERNALD CLOSURE PROJECT

GENERAL COMMENTS

17. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: General Page #: NA Line #: NA Code: C
Original Comment #: 1
Comment: In general the plans contain very little in terms of layered institutional controls and rely primarily on signs and fencing to maintain protectiveness. Both of these are known to fail over relatively short periods of time. As stated in Ohio EPA's comments on the previous version of this document, Ohio believes the creation of an on-site education facility is an essential layer of institutional control to ensure the long-term protectiveness of the site. Such a facility is an important and necessary component of the institutional controls and is needed, regardless of the outcome of the State of Ohio's NRD suit. Museums and education facilities have been established and funded at numerous DOE sites throughout the complex. These facilities educate local stakeholders about the history of the site, on-going operations, monitoring data, and/or other pertinent site information. It seems entirely reasonable that Fernald would have a similar facility to support long term protectiveness of the remedies.

FCAB recommendations #00-4, #2001-03, and #2002-03 all refer to the need for DOE to establish an on-site education facility as part of its long-term stewardship program for the site. Ohio EPA concurs with the recommendations and believes having this information on site and easily accessible to the public acknowledges that DOE is being responsible to the community. Records should include historical information, past remedial activities, and any information collected after Fernald is closed. In addition, historical information should be in a form that is understandable by all stakeholders in the community including those unfamiliar with the Fernald site. Funding a facility staff person to respond to inquires and conduct public outreach activities will provide payback in the form of an educated community that is less likely to call for DOE to return to the site and reinvestigate/remediate the facility in the near term. DOE installed a similar facility at the Weldon Springs site as part of their CERCLA cleanup activities/responsibility and considers the facility, trails, prairies and gardens as part of the site institutional controls.

An on-going and active public outreach program following "closure" will be an essential component of a successful long term management of the site. Without such a program DOE can expect within the near future for new residents, local governments and others to begin questioning the effectiveness of the cleanup and on-going monitoring to protect them. It is likely that the area around Fernald will see rapid growth over the coming decade and that growth will bring with it an entirely new set of residents asking many of the same questions and demanding answers and accountability. An on-going public outreach program will help ensure the remedies remain protective and restrictions are maintained, but more importantly, it will help the community believe that the site is safe and protective.

The IC Plan should be revised to include the creation of an on-site education facility/repository and an on-going public outreach program as necessary institutional controls.

Response: DOE agrees that providing information to the public regarding controls on the site, site risks and ongoing monitoring and maintenance is a fundamental component of maintaining institutional controls. A commitment to providing a centralized system for access to site information is currently contained in Section 5.0 of Volume 2 of the LMICP. Currently, a Draft Community Involvement Plan is being developed by both OLM and EM and will be discussed in Volume 1 of the next revision (February 2005) of the LMICP. It is anticipated that the Community Involvement Plan will be distributed to the regulators and stakeholders by early 2006. By working closely with OLM, Regulators and Stakeholders on future revisions of the LMICP, the specific process and system for providing information to the community will be defined. It is also important to note that there will be personnel on-site as part of the

OLM organization or contracted to OLM during normal hours of operation. Personnel will be on-site on normal working days at a minimum involved in operation of the CAWWT and surveillance and maintenance activities. The final version of the LMICP will contain a more detailed plan for making information available to the community.

Regarding the construction of an on-site education facility, please refer to DOE's letter to the FCAB dated June 29, 2004. This letters offers to make several trailers, containing over 6,000 square feet of space, available for post closure information needs, including the storage of photographs.

Action: None required.

18. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: General Page #: NA Line #: NA Code: C
Original Comment #: 2
Comment: The submittal in whole substantially understates the regulatory and enforcement authority of the State of Ohio. Throughout, the documents reference U.S. EPA enforcement authority for activities, yet seldom mentions Ohio authority. The documents should be revised to recognize that Ohio has authority to initiate enforcement actions in nearly every imaginable failure of site post closure management through mechanisms such as Ohio solid waste rules, RCRA authority, Consent Decree, NPDES, CWA and CERCLA third party suits. Additionally, considering Ohio's vested interest in ensuring protection of its citizens and environment we are probably the most likely agency to initiate such enforcement.
Response: The LMICP is being submitted under the 1991 Amended Consent Agreement between U.S. EPA and DOE. Volume 2 of the LMICP will be enforceable by U.S. EPA under the Amended Consent Agreement. The role of Ohio EPA in the Consent Agreement is established as a consultation role with U.S. EPA. ("Whereas, the schedules contained in this amendment are based upon discussions and negotiations between U.S. EPA and U.S. DOE in consultation with the State of Ohio;"). OLM will consult OEPA on matters pertaining to site activities and include OEPA on all submittals and notifications. OLM further agrees that OEPA has enforcement authority on a number of issues related to failure scenarios at the FCP during legacy management (e.g., CWA, RCRA).
Action: Revise document to more clearly define the role of OEPA in enforcement matters during legacy management.

19. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: General Page #: 2 Line #: NA Code: C
Original Comment #: 3
Comment: The two documents, CLM & ICP Volumes I & II, have the same title except for Volume number. If Volume I is not an enforceable document and not part of Volume II, Volume 1's purpose should be made clear and that it is a different document (not enforceable) from Volume II. Both volumes should have different titles to distinguish them from each other (see page 2, first parag of Vol I). In addition, it was noted that in several places throughout Volume II that the two documents were discussed as separate entities and having separate titles (Volume II as the ICP & Volume I as the LMP). Please make appropriate corrections so that it is understandable by all audiences.
Response: The distinction and relation between Volume 1, the Legacy Management Plan, and Volume 2, the Institutional Controls Plan of the Comprehensive Legacy Management and Institutional Controls Plan is made early in both volumes: Section 1.1, pp 1 and 2 of Volume 1; Section 1.1, p 3 of Volume 2.
Action: Further review of the document will be conducted and additional clarification of the two volumes will be incorporated, as appropriate. Subtitles will be added to the cover pages as well.

20. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: General Page #: NA Line #: NA Code: C
Original Comment #: 4
Comment: DOE should reconsider the benefit of having Volume 1 exist. The confusion and redundancy presents possible problems for future execution of site stewardship. Due to the significant overlap between it and the rest of the document, it is unclear what activities DOE is trying to protect from enforceability. It would be much clearer to the general public, reviewers and future site managers to have one cohesive plan that is enforceable.

Response: The Comprehensive Legacy Management and Institutional Controls Plan will remain a two-volume document. Volume 1 describes the policies related to legacy management, public involvement, and information and records management. Volume 1 is the non-enforceable portion of the document. Volume 2 describes the requirements and implementation of the requirements for institutional controls and contingency planning during legacy management. Volume 2 is the enforceable portion of the document.

Action: See Action for Comment Response # 19.

21. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: General Page #: NA Line #: NA Code: C
Original Comment #: 5

Comment: The documents in general contain numerous references to activities/information that would be included at some future undetermined date. With DOE's date for "closure" fast approaching, it is imperative that these place holders be replaced with substantive details. In nearly all cases, the next revision should replace place holders with actual details. In the few instances where information is still outstanding and place holders must be included, DOE should highlight the missing information via a footnote that provides the date for inclusion of that missing information/action. An attachment should be generated that then lists the footnotes and tracks them for revision and inclusion.

Response: Currently, the LMICP is a living document, developing as the site progresses toward closure and as DOE-FCP works with OLM to plan the transition of the site. Due to the complexity of legacy management issues at the site, it is not envisioned that all details can be worked out prior to the next revision of the LMICP.

Action: The LMICP will be revised for distribution in February 2005. Another revision will be issued in January 2006 (prior to closure). Text will be added in the Introduction of Volume I to provide additional information on the plan for revising and finalizing the LMICP prior to Closure.

22. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: General Page #: NA Line #: NA Code: C
Original Comment #: 6

Comment: Throughout the documents reference is made to the IEMP for additional detail. Since the IEMP appears to be the implementing document for much of the stewardship monitoring activities, the IEMP should be included as an attachment to this document. Inclusion of all supporting plans within the IC plan will create a one stop document for all post "closure" activities. Additionally, the reporting currently included in the Site Environmental Report should be incorporated into the annual reporting under the IC Plan.

Response: In Volume 2, p. 26, Section 5.3 it is stated that the IEMP will be included as an attachment to the final version of the LMICP. It is anticipated that Revision 4 of the IEMP will be included as an attachment in the February 2005 revision of the LMICP. If Revision 4 of the IEMP is not completely finalized or approved, the IEMP will be included as an attachment to the LMICP in January 2006. As indicated, an update of the LMICP will occur in January 2006 prior to closure.

Action: As indicated in the response.

23. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: General Page #: NA Line #: NA Code: C
Original Comment #: 7

Comment: The RtCs should be included with the submittal of these documents.

Response: Response to Comments will be issued to the Agencies no later than November 24, 2004. The revised LMICP, including all attachments will be issued by February 28, 2005. A revision of the OMMP is scheduled to occur before the end of 2004 to support the Aquifer Restoration schedule in the field. The revised version of the OMMP will be included in the submittal of the full LMICP in February 2005. Text will be added to the Introduction of Volume I providing additional detail on the plan for revising and finalizing the LMICP, including the attachments.

Action: Comment responses are being submitted prior to revision of the LMICP and all attached documents.

SPECIFIC COMMENTS – VOLUME 1 – LEGACY MANAGEMENT PLAN

24. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 1.1 Page #: 2 Line #: NA Code: C
Original Comment #: 8
Comment: This states that "The IC Plan (i.e. Volume 2) is an enforceable document with U.S. EPA, as are the three support plans." As stated above, these documents are also enforceable by Ohio EPA.
Response: See Comment Response # 18.
Action: See Action for Comment Response # 18.

25. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 1.1 Page #: 5 Line #: NA Code: C
Original Comment #: 9
Comment: The U.S. EPA document cited here is not found in the references section.
Response: Agree.
Action: Reference to the document will be included in the reference list.

26. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.3.1 Page #: 7 Line #: NA Code: C
Original Comment #: 10
Comment: The paragraph as written suggests OLM may make decisions regarding changes in inspections, monitoring, etc. The paragraph should be revised to clarify that any such changes will need to be approved by Ohio EPA and U.S. EPA.
Response: Refer to Comment Response # 18.
Action: None required.

27. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.3.2 Page #: 7 Line #: NA Code: C
Original Comment #: 11
Comment: The section should be revised to include a discussion of a requirement for detailed information regarding site conditions and prohibited activities within any and all contracts/subcontracts issued for work on the site. Such language is also needed within the IC Plan to ensure that prohibited activities are clearly detailed in contract/subcontract language and contractors are aware of site requirements.
Response: Due to the anticipated diversity of future contracts and the inability to predict every situation in which a contract will be required, it is not feasible to add specific contract language in the LMICP. Additional language will be added stating that each contract will contain appropriate restrictions to be placed on contractors performing work in the FCP.
Action: The text will be revised to clarify that specific contracts will include the appropriate restrictions and prohibited activities for the work to be performed on the site.

28. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 1.3.3 Page #: 8 Line #: NA Code: C
Original Comment #: 12
Comment: As stated above the IC Plan is also enforceable by Ohio EPA.
Response: See Comment Response # 18.
Action: See Action for Comment Response # 18.

29. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.3.5 Page #: 8 Line #: NA Code: C
Original Comment #: 13
Comment: Site Inspection schedules are to be approved by U.S. EPA and Ohio EPA. In addition, these schedules are to be provided in the IC Plan and the appropriate accompanying documents.
Response: Volume 2, the Institutional Controls Plan, is the enforceable portion of the document and changes will be subject to approval. The U.S. and Ohio EPAs will be kept fully informed of inspection schedules (found in Volume I, which in non-enforceable) and any changes to those schedules. (See also Comment Response # 18.)
Action: None required.

30. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 1.3.6 Page #: 8 Line #: NA Code: C
Original Comment #: 14
Comment: Any such changes also need approval by Ohio EPA.
Response: See Comment Response # 18.
Action: Wording will be revised in the text as necessary to describe Ohio EPA's involvement.

31. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.2.1 Page #: 12 Line #: NA Code: C
Original Comment #: 15
Comment: Include a discussion of the role of the site as a thorium repository as it may be relevant to future site managers in trying to understand the role of thorium storage at the site.
Response: Agree.
Action: Text will be included in Section 2.2 describing the historical role of the site as a thorium repository.

32. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.3.1 Page #: 13 Line #: NA Code: C
Original Comment #: 16
Comment: WAC criteria were developed in consultation with the stakeholders as well. The site has a long history of significant involvement of stakeholders, and the OSDF is one of the prime examples of progress made by stakeholder involvement.
Response: Agree.
Action: Stakeholder involvement in WAC development will be included in text.

33. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.3.1 Page #: Line #: NA Code: C
Original Comment #: 17
Comment: The document should be revised to include specific reference to all revisions to the various RODs. If this section is to summarize the remediation decisions it needs to include the changes to those documents. Specific references are beneficial such that future stewards will be aware of all decision documents and subsequent revisions to those documents. Include all RODs, ESDs, ROD Amendments, and fact sheets. The best example of why this is needed is the document's reference to the OU5 ROD for the groundwater cleanup level of 30ppb, when in fact the ROD lists 20ppb and a subsequent document changed it to 30ppb.
Response: Agree.
Action: The changes to the ROD documents will be referenced in the LMICP, – whether by including a general reference list by 'group' and/or references to the website where the documents and their change documents are available.

34. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.3.1 Page #: 14 Line #: NA Code: C
Original Comment #: 18
Comment: DOE failed to appropriately incorporate the response to Comment #41 (Original Ohio EPA comment #9). Please make this correction and provide the appropriate information in the text.
Response: The references will be reviewed and corrected for consistency. Following settlement of the NRD claim, another revision to the NRRP will be issued and subsequently referenced in the LMICP.
Action: Correction of the reference (to January 2002) will be made in the next revision (February 2005). After the next revision of the NRRP is completed, it will be referenced in the revision of the LMICP that follows.

35. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.3.1 Page #: 15 Line #: NA Code: C
Original Comment #: 19
Comment: This section should be revised to include references for the numerous documents that resulted from the discussions about future site use. Most of these documents support and recommend a publicly accessible green space regardless of the outcome of the State of Ohio's NRD claim. The following citations should be included at a minimum: *Environmental Assessment for Proposed Final Land Use At The Fernald Environmental Management Project Rev. 1* June 1999; *Finding of No Significant Impact* June 1999; *Master Plan For Public Use Of The Fernald Environmental Management Project* June 2002; FCAB recommendations #00-4, #2001-03, and #2002-03 and *Telling the story of Fernald, Community Based Stewardship and public access to information* October 2002. Again, this information is important and necessary to reference for future decision makers.
Response: References to the Land Use EPA and the FONSI will be added. Public Use of the site is being resolved as part of the pending NRD Settlement and will not be further addressed in the LMICP until the settlement is finalized.
Action: The Land Use EA and FONSI will be referenced in the text.

36. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.3.2 Page #: 15 Line #: NA Code: C
Original Comment #: 20
Comment: This paragraph is confusing and does little to clarify the schedule for completion or the initiation of legacy management. The only dates provided are references to contractual milestones yet the last sentence states that "initiation of legacy management is independent of any political or contractual definition...." Please clarify the specific date or criteria for the initiation of legacy management.
Response: Replace the last sentence in the paragraph with the following: The process of LM or LTS will begin immediately following Fluor Fernald's Declaration of Physical Completion (this is the point commonly referred to as "Closure"). The current baseline schedule shows Physical Completion occurring on March 31, 2006. Under the scenario currently being discussed with the Office of Legacy Management (OLM), Legacy Management activities would begin on April 19, 2006 with the OLM assuming operational responsibilities for the site on that date. The exact timing of the transfer of site responsibilities is dependent on DOE acceptance of Fluor Fernald's Declaration of Physical Completion and is still being discussed and may result in modification to the plan outlined above.
Action: Add text to clarify plan for the transition to OLM.

37. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Graphic 8131.4 Page #: 16 Line #: NA Code: E
Original Comment #: 21
Comment: Include a figure #.
Response: Agree.
Action: A figure number will be included.

38. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Graphic 8131.4 Page #: 16 Line #: NA Code: E
Original Comment #: 22
Comment: Under the title "Land Use," the number of acres for Development appears to be incorrect. This number should be 23 instead of 30.
Response: The "Development Area" referred to in Graphic 8131.4 (Figure # will be added in the next version of the LMICP) includes more than the 23 acre set aside area. All developed areas for support are included in this total acreage. Examples include the footprint of CAWWT, access roadway, parking for the OSDF and well houses.
Action: Add Figure # as noted.

39. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.4.1 Page #: 17 Line #: NA Code: C
Original Comment #: 23
Comment: Are these dimensions including the expanded cell #8? If not, revise to include the latest numbers.
Response: Agree.
Action: Numbers will be revised in the text to reflect new dimensions.

40. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.4.2 Page #: 18 Line #: NA Code: C
Original Comment #: 24
Comment: See response to comment #41, original comment 9, with respect to referencing the NRRP. Additionally the document is referenced differently here than in Section 2.3.1.
Response: The references will be reviewed and corrected for consistency. Following settlement of the NRD claim, another revision to the NRRP will be issued and subsequently referenced in the LMICP. See Comment Response # 34.
Action: Correction of the reference (to January 2002) will be made in this revision, unless another revision of the NRRP is completed prior to issuance of the next version of the LMICP in February 2005.

41. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.4.4 Page #: 19 Line #: NA Code: C
Original Comment #: 25
Comment: DOE's RtC for comment #42, original Ohio EPA comment 10, states as does the EA, that a decision regarding the 23 acres will be re-evaluated in 2004. The text here reflects neither of these. The document should be revised to specifically state when and how DOE will address the status of the 23 acres. The fact that DOE continues to not address this issue puts doubt on the rest of the issues left undetermined in this document.
Response: It is agreed that a discussion of the 23- acre area should be included in the LMICP.
Action: Surveillance and maintenance of the 23- acre area will be included in the next revision of the LMICP, due February 2005. The decision(s) made regarding use of the area will be documented through another means.

42. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.0 Page #: 21 Line #: NA Code: C
Original Comment #: 26
Comment: DOE's position that maintenance of trails and an on-site education facility is not their responsibility is inconsistent with the approach DOE has taken at other DOE sites. Specifically, DOE both constructed and maintains an educational facility at Weldon Springs site as well as trails and public access. Additionally, DOE viewed these as institutional controls at Weldon. Clarification of DOE's inconsistency between sites is warranted. It would seem that if DOE found it appropriate at Weldon Springs to include the educational facility as part of the CERCLA action that the creation and maintenance of one at Fernald would be equally appropriate.
Response: DOE does not maintain trails at the Weldon Spring Facility. Trail maintenance is performed by the State of Missouri through the Missouri Department of Environmental Conservation. A final decision on the construction of public use amenities is part of the NRD settlement.
Action: Any further detail regarding this matter will be included in the text. The final version, prior to closure (January 2006), will explain DOE's decision and role regarding public use amenities.

43. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.0 Page #: 21 Line #: NA Code: C
Original Comment #: 27
Comment: The document states that "*If constructed, monitoring and maintenance of those amenities would be necessary to ensure they remain safe for use. Stewardship of public use amenities is not within DOE's responsibilities and has not been determined. A similar scenario applies to the potential multi-use educational facility. The construction of such a facility is not an Office of Legacy Management responsibility, and if such a facility is constructed, funding for the management*

and maintenance of the facility would have to be identified." The provision of a multi-use educational facility is still under discussion, as are the potential public amenities that may be provided. It will be the responsibility of DOE to provide for operation and maintenance of these facilities after closure. Although direct management may be by entities other than DOE, DOE will still bear the ultimate responsibility as the landowner and responsible party. This responsibility does not end at closure.

Response: See Comment Response # 42.

Action: See Action for Comment Response # 42.

44. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.0 Page #: 21 Line #: NA Code: C
Original Comment #: 28

Comment: When DOE agreed to take on the re-interment of Native American remains and provide land for their burial it was understood that DOE would take responsibility for management, maintenance and care of the property of those already buried on the FCP. However, this has not been mentioned in this document. It should be pointed out that DOE will take care of the current burial area and not take responsibility for new or future burials. This information must be included, especially since this is DOE's position and the Legacy Management Plan is DOE's "policy document" for stewardship activities.

Response: DOE does intend to monitor and protect the archaeological sites and the Native American remains already buried on the FCP.

Action: Text will be revised to include monitoring and protection of archaeological sites and the current reinterment area.

45. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.1 Page #: 21 Line #: NA Code: C
Original Comment #: 7

Comment: When and through what mechanism is a decision regarding the automated monitoring of cell one and additional OSDF cells expected to be addressed?

Response: It has been determined from Cell 1 that there is no added beneficial use of the automated monitors; therefore, no such monitors will be installed on any of the other cells; the Cell 1 cap monitors will be abandoned in place.

Action: Text will be revised to indicate that no additional monitors will be installed on the remaining cells.

46. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 3.2 Page #: 22 Line #: NA Code: C
Original Comment #: 30

Comment: This section appears to support our position that DOE will be responsible for construction and maintenance of public amenities (any amenities that may be constructed to support public use of the FCP would need to be funded through the Office of Legacy Management...legacy management activities could be necessary to maintain roads...). This appears to contradict the statements made in section 3.0 (If constructed, monitoring and maintenance of those amenities would be necessary to ensure they remain safe for use. Stewardship of public use amenities is not within DOE's responsibilities...). Although monitoring and maintenance of restored areas is addressed in this section "...to ensure that applicable laws and regulations are followed," monitoring beyond closure to address the compliance and functional monitoring requirements of restoration plans is not addressed. This monitoring has to fall under some post closure responsibility and Legacy Management is the logical location for it.

Response: Section 3.2 of the LMICP outlines the scope of surveillance and maintenance activities at the FCP. The referenced text is stating that the surveillance of any public use amenities that may be constructed on the FCP will be part of OLM's responsibilities. The text is not stating that construction of public use amenities will be funded by OLM. Maintenance of public use amenities will be determined through the outcome of the NRD Settlement. Roads and parking areas required to support Legacy Management activities will be maintained by OLM.

Action: Text will be clarified to clearly outline OLM's responsibilities regarding public use amenities at the site.

47. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.2 Page #: 22 Line #: NA Code: C
Original Comment #: 31
Comment: This section refers to actions that may be authorized by the "site steward." It should be revised to clarify that any activities that are inconsistent with the approved decision and IC documents will require approval from the OEPA and U.S. EPA. For example removal of soil or plant material would require concurrence from the agencies.
Response: Activities that are inconsistent with the IC Plan require approval from the U.S. EPA and involvement from OEPA as outlined in Comment Response # 18.
Action: See Action for Comment Response # 18.

48. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.3 Page #: 24 Line #: NA Code: C
Original Comment #: 32
Comment: As stated previously, Ohio EPA has a regulatory authority to enforce most of the activities in the IC Plan and would expect to use that authority if necessary.
Response: See Comment Response # 18.
Action: See Action for Comment Response # 18.

49. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.4 Page #: 24 Line #: NA Code: C
Original Comment #: 33
Comment: Annual reporting is a necessary component of the post closure management. The specific details of the annual reporting should be included in the next revision of this document. Ohio EPA can not see any reason for further delaying the details of this reporting requirement. Obviously adjustments could be made over the course of refining this document, however defining the requirements and when the first report will be submitted should be included in the next revision.
Response: Reporting is being discussed with OLM. A process to provide regular reporting to U.S. EPA and OEPA will be in place when OLM takes over responsibilities at the site. The February 2005 version of the LMICP will outline additional detail to the degree possible.
Action: Text will be revised to outline reporting in more detail to the degree more information is available.

50. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.4 Page #: 24 Line #: NA Code: C
Original Comment #: 34
Comment: DOE is proposing to provide reports, at a minimum, to the agencies, stakeholders and the public, on an annual basis. How will data and information requiring immediate attention by legacy management be presented to the public so they will be informed quickly? Especially if there is a concern for the community's health and safety, information such as this should not be placed in a yearly report. The public doesn't want to know something twelve months after the fact, if their health and safety could be effected.
Response: It is agreed that the agencies, stakeholders, and public should be notified immediately of any health concerns or 'emergency' issues in the event that they occur. (See Comment Response # 49.)
Action: The text will be revised to state that there will be immediate notification in the event of an emergency situation and will state how that notification will occur. In addition this type of information will be posted initially on the home page for the GEMS and subsequently moved to the Fernald section of GEMS.

51. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 5.1 Page #: 26 Line #: NA Code: C
Original Comment #: 35
Comment: The next to last paragraph on this page suggests DOE will continue to work with the FCAB to promote discussions "regarding the future use and legacy management of the FCP." The FCAB and public have been working on just this question for a number of years and have very clearly stated their expectations in numerous reports and recommendations. However, DOE has failed to follow through with

commitments to those recommendations on future use. This document should state specifically what future use and access DOE is going to support at the Fernald site regardless of the outcome of the State of Ohio's lawsuit against DOE. Decisions regarding land use, public access, education and maintenance were all made at the Weldon Springs site without the need for a lawsuit to be settled. After DOE has clarified this minimum effort subsequent revisions could include additional scope resulting from any potential settlement with the State of Ohio.

Response: Details regarding public use of the site are still being discussed/considered.

Action: Any additional available detail will be included in the February 2005 revision of the LMICP.

52. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 5.1 Page #: 26 Line #: NA Code: E
Original Comment #: 36
Comment: In the second paragraph of this section there is a reference relating back to Section 6.3, regarding the Multi-Use Education Facility. However, there is no discussion in Section 6.3 about the MUEF. Please correct this error.
Response: Agree.
Action: Reference will be corrected in the text.

53. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 5.2 Page #: 28 Line #: NA Code: C
Original Comment #: 37
Comment: This section states that DOE "anticipates" the continuance of providing updates to the public by means of public meetings, workshops, etc., through the remediation process and stewardship planning. However, there is no mention of public meetings to inform the public of important current events after closure. Ohio EPA would expect DOE/LM to provide some kind of mechanism to inform the community on periodic site Inspections, annual reports, possible changes to site surveillance and maintenance activities, etc.
Response: OLM anticipates that a forum/format similar to what is currently used will be in place to inform the public of what will be allowed or not allowed, decisions, changes, or events after closure. In addition, a Community Involvement Plan (CIP) is being developed as a joint effort between DOE-FCP and OLM, which will provide detail on how OLM will work with the community during legacy management of the site. The CIP will be included as an attachment to Volume I of the LMICP in one of the next two revisions depending upon its availability.
Action: Text will be revised to discuss continuation of the current format for providing the public with information and updates as well as a discussion of the Community Involvement Plan.

54. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.0 Page #: 29 Line #: first paragraph Code: C
Original Comment #: 38
Comment: DOE 2002d is cited here but not included within the Reference Section.
Response: Agree.
Action: Reference will be corrected.

55. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.0 Page #: 29 Line #: last paragraph Code: C
Original Comment #: 39
Comment: This section references "GEMS" and Weldon Springs data being available through the website "www.lm.doe.gov". When checked, neither is available on the referenced website. In fact, the legacy management website contains very little if any useful information regarding site management or data access.
Response: GEMS information is available through the website under the Grand Junction Site link. Questions regarding GEMS can be sent to www.gjo.doe.gov/LM/. Environmental data and information from the Weldon Spring site is available through the GEMS link.
Action: The text will be revised to include additional detail regarding obtaining the information from GEMS through the website. The GEMS will be linked to Fernald environmental data and information after site closure.

56. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 6.0 Page #: 30 Line #: last bullet Code: C
Original Comment #: 40
Comment: It would be helpful if the documents referenced in this document were retrievable through the web.
Response: DOE is working with OLM on records management, information management and the availability and the public's accessibility to documents and other information post-closure.
Action: DOE will continue to work with OLM on document availability, including accessibility on-line. The OLM has installed the Hummingbird Record Management System and will provide Internet access for the public through this system to all approved Fernald record and document information.

57. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.0 Page #: 30 Line #: last paragraph of section Code: C
Original Comment #: 41
Comment: The document should define a date by which DOE intends to make a decision regarding the structure and content of the data repository.
Response: Fluor Fernald and DOE-FCP are working closely with OLM regarding the transfer of electronic information and data to a system that will be managed and maintained by OLM. The next version of the LMICP (February 2005) will provide as much detail as is available regarding the structure and content of the data repository. The level of detail will depend on the status of the transition plans between OLM and the site. The Final version of the LMICP will outline in detail the structure and content of the data repository.
Action: Add more detail regarding the structure and content of the data repository to next version of the LMICP.

58. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.3 Page #: 31 Line #: 2nd paragraph Code: C
Original Comment #: 42
Comment: When will DOE develop the lists of documents? The list of documents could be included as an attachment or appendix to this document.
Response: A preliminary list of records critical for legacy management has already been developed. The list is being reviewed and refined. An updated list will be finalized prior to the January 2006 version of the LMICP. A list of the records could be attached or a reference to the location of the list will be included.
Action: Any further detail available regarding the list of accessible hard copy records will be included in the text.

59. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Table 6-1 Page #: 32 Line #: NA Code: C
Original Comment #: 43
Comment: Documents that should be added include all changes to RODs (ESDs, Fact sheets, etc) and all changes to work plans and sampling plans (e.g., variances, change pages). DOE constantly changes work and sampling plans during and after submittal of the actual plan often times resulting in sampling or work that is significantly different from what was defined in the work plan. Thus someone trying to recreate or understand a future situation would not be aware of the actual historic actions if they only reviewed the work/sampling plans.
Response: Agree.
Action: A manner in which to reference the change documents or include them in the listing on Table 6-1 will be developed and included in the text.

SPECIFIC COMMENTS - VOLUME 2 – INSTITUTIONAL CONTROLS PLAN

60. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: General Page #: NA Line #: NA Code: C
Original Comment #: 44
Comment: The plan should include a detailed drawing that shows all areas that will not have been remediated at the time of "closure" and will require future remediation. Examples include the utilities corridors, CAWWT and soils underlying it. Specific controls for those areas should be listed, the process for achieving remediation levels in those areas and expected date for their completion.
Response: Agree. A detailed drawing that shows all areas that will not have been remediated at the time of "closure" and will require future remediation will be developed and included.
Action: As noted in the response.

61. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: General Page #: NA Line #: NA Code: C
Original Comment #: 45
Comment: The recent breach of the active outfall line has revealed a problem with maintaining sufficient soil cover over the buried pipeline to protect it. The IC plan should be revised to address inspection requirements and methods to prevent future breaches and ensure adequate soil cover is maintained.
Response: Agree.
Action: The text will be revised to include the specification for annual inspections of the line as long as the line is active. The annual inspection will include a step to verify that the soil cover is sufficient to protect the line.

62. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: General Page #: NA Line #: NA Code: C
Original Comment #: 46
Comment: The plan should provide additional detail regarding how DOE intends to implement enforcement of the ICs. This will be particularly important if a land management contractor is used. Details regarding the steps DOE will take to enforce and contingency plans for failures should be included so a clear path of action is laid out for future stewards and regulators. DOE will always retain responsibility for ensuring ICs are in place and not violated.
Response: Agree.
Action: Details will be developed as resources are secured for the OSDF, CAWWT, etc. Section 4.0 of Volume 2 will contain additional detail by the January 2006 version of the LMICP.

63. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.0 Page #: 1 Line #: OU 4 bullet Code: C
Original Comment #: 47
Comment: Re-write this sentence so that it is clear that the silos and their contents are to be shipped off-site for disposal.
Response: Agree.
Action: The sentence will be reworded to ensure clarity and understanding.

64. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.0 Page #: 1 Line #: OU 5 bullet Code: C
Original Comment #: 48
Comment: In the case of soils, the reader is referred to the SEP. For groundwater, to the OU 5 ROD. The casual reader may not have these references available. Add sentences alluding to soil excavation to meet risk-based FRLs and groundwater remediation to the uranium MCL.
Response: Agree.
Action: Text will be revised to include additional information as suggested.

65. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.0 Page #: 2 Line #: 2nd sent. after last bullet Code: C
Original Comment #: 49
Comment: This sentence describes what will remain on-site after closure. The sentence should be modified to note that the OSDF will remain after closure as well as contaminated soil along and around utility corridors.
Response: Agree.
Action: Text will be revised to include additional information as suggested.

66. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.0 Page #: 2 Line #: NA Code: C
Original Comment #: 50
Comment: DOE failed to incorporate response to Comment #41 (Original comment #9) regarding the NRRP. Please make this correction and provide the appropriate information in the text.
Response: The text is correct as written. It is anticipated that another revision of the NRRP will be completed upon settlement of the NRD claim, which is expected in the near future. The next revision of the NRRP will then be referenced in future revisions of the LMICP.
Action: None required.

67. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.0 Page #: 2 Line #: NA Code: C
Original Comment #: 51
Comment: Second to the last paragraph refers to Figure 1. Figure 1 is missing from this section.
Response: Figure 1 is included in the document at the end of the Section.
Action: The text will remain as is. "Figure 1" will be added to the figure.

68. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.1 Page #: 3 Line #: last sentence Code: C
Original Comment #: 52
Comment: As stated previously, Ohio EPA has a regulatory authority to enforce most of the activities in the IC Plan and would expect to use that authority if necessary. The document should be revised to reflect this fact.
Response: See Comment Response # 18.
Action: See Action for Comment Response # 18.

69. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.1 Page #: 3 Line #: NA Code: C
Original Comment #: 53
Comment: The two documents, CLM & ICP Volumes I & II, have the same title except for volume number. If Volume I is not an enforceable document, covering legacy management policies and LM's purpose, then it should not be part of Volume II. In both Vol. I & II, it should be made clear that Vol. I is a different document, i.e., not enforceable and give it a different title to distinguish it from Volume II.
Response: See Comment Response # 19.
Action: See Action for Comment Response # 19.

70. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.3 Page #: 4-5 Line #: NA Code: C
Original Comment #: 54
Comment: This section should provide a Summary Table of all the ICs at Fernald. This would provide all ICs in one concise table and give a better understanding of the total picture of what will be monitored at Fernald after closure.
Response: Section 1.4 (Section 1.3 received comment) refers to the types of ICs. Tables 2-1, 2-2, 3-1 and 3-2 reference/list in table form the ICs that will be in effect at the site.
Action: Text for Section 1.3 will be revised to include a reference to Section 1.4 and reference the tables located in Sections 2 and 3.

71. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.5 Page #: Line #: Code: C
Original Comment #: 55
Comment: As stated previously, Ohio EPA has a regulatory authority to enforce most of the activities in the IC Plan and would expect to use that authority if necessary. The document should be revised to reflect this fact.
Response: See Comment Response # 18.
Action: See Action for Comment Response # 18.

72. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.6/Graphic #8131.4 Page #: Line #: NA Code: C
Original Comment #: 56
Comment: Under "Land Use" it states that there are "30 acres of Development Area." Ohio EPA understood the EA to only include 23 acres for possible development. Please clarify.
Response: See Comment Response # 38.
Action: None required.

73. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1/Graphic #8131.4 Page #: Line #: NA Code: C
Original Comment #: 57
Comment: Include a Figure #.
Response: Agree.
Action: A figure number will be included.

74. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.1.1 Page #: 7 Line #: NA Code: C
Original Comment #: 58
Comment: This bullet addresses prohibited activities in streams, ponds, and wetlands. Add 'fishing' to the list of prohibited activities.
Response: Some of the prohibited activities (e.g., fishing) are still being discussed/considered. It is anticipated that final decisions on prohibited activities will come out of the NRD settlement.
Action: Once a final decision regarding all prohibited activities has been reached, the list will be updated/included in the text to reflect those decisions.

75. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.1.1 Page #: 7 Line #: NA Code: C
Original Comment #: 59
Comment: The list should be predicated with "Unauthorized personnel may not..." This eliminates the confusion on actions that are banned entirely or only banned for unauthorized personnel. Activities such as wading, as written suggests an absolute ban where as it should only address unauthorized personnel.
Response: Agree.
Action: The text will be revised as suggested for clarification.

76. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.1.1 Page #: 7 Line #: last sentence Code: C
Original Comment #: 60
Comment: Include Ohio EPA. Additional detail regarding the process through which restrictions can be modified is needed. The existing statement does not sufficiently define the process for revisions.
Response: Agree. See Comment Response # 18.
Action: Revise document to more clearly define the role of OEPA in the modification processes.

77. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.1.2 Page #: 7 Line #: NA Code: C
Original Comment #: 61
Comment: Additional detail should be included to clarify what DOE means in the statement "...should they become necessary." Draft deed language should be included in this document so that is reviewed and

concurred upon in anticipation of it being needed. A figure documenting all needed on and off-property notations/restrictions must be included.

Response: In some cases, governmental controls will only become necessary if DOE transfers site management to another Agency or organization. Per the applicable ROD requirements, the site will remain in Federal ownership in perpetuity and DOE will continue to monitor and maintain the OSDF. If others portions of the site are transferred to another agency or organization for management, additional controls may be warranted to further guard against unintended uses of the site. For example, deed restrictions will not be needed as long as DOE maintains primary responsibility for the entire site. If some portion of the site is turned over to another organization for management, it may be warranted to have deed restrictions or similar restrictions in place.

Action: Clarify text Section 2.1.2 regarding when and under what situations government controls will be required. Further explanation will be included regarding the continued federal ownership of the site.

78. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.1.2 Page #: 8 Line #: NA Code: C
Original Comment #: 62

Comment: It's Ohio EPA's understanding that DOE will maintain ownership in perpetuity, therefore no transfer of ownership should occur (see response to comment #49, original comment #17and response to comment #56, original comment # 24).

Response: The Federal government will maintain ownership of the property. If ownership is transferred from OLM to another government agency, the new agency will take over responsibility for the property.

Action: The text will be revised to clarify property ownership and transfer to another Federal government agency.

79. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.1.2 Page #: 8 Line #: NA Code: C
Original Comment #: 63

Comment: The section should be revised to include a discussion of the inclusion of detailed information regarding site conditions and prohibited activities within any and all contracts/subcontracts let for work on the site. Draft uniform contract language should be included in the IC plan for insertion within any and all future site contracts.

Response: Agree. Additional language will be added to the IC Plan regarding restrictions that will be placed on contractors performing work in the FCP. To the degree possible specific language to be included in contracts will be added to the LMICP.

Action: The text will be revised to describe the prohibited activities within all contracts/subcontracts let for work on the site.

80. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.1.3.1 Page #: 8 Line #: NA Code: C
Original Comment #: 64

Comment: Copies of each type of sign should be included in the IC plan. This will allow for review of the proposed language, documentation of the requirement and public understanding of the need for them.

Response: Agree. However, specific sign details have not yet been determined.

Action: Upon final decision of the signs and postings, examples will be included in the LMICP, most likely in the January 2006 version, unless details are determined prior to the February 2005 version.

81. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.2 Page #: 9 Line #: NA Code: C
Original Comment #: 65

Comment: It does not appear, in the accompanying illustration, that the fence encompasses the buffer area.

Response: The buffer area was to be included within the fenced area in the figure.

Action: The figure will be reviewed and revised, if necessary, to ensure the buffer area is included within the fence.

82. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.2.2 Page #: 10 Line #: NA Code: C
Original Comment #: 66
Comment: The document should include copies of all real estate notifications and restrictions to be utilized. Additionally it must provide specific detail on how and where these restrictions will be implemented.
Response: It may not be feasible to include copies of all notifications and associated documents in the LMICP.
Action: The inclusion of copies will be considered. In the event that copies can not be included, then a reference to where those documents are located and how they may be accessed or reviewed will be included in the text.

83. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.2.3 Page #: 10 Line #: NA Code: C
Original Comment #: 67
Comment: Copies of each type of sign should be included in the IC plan. This will allow for review of the proposed language, documentation of the requirement and public understanding of the need for them.
Response: See Comment Response # 80.
Action: See Action for Comment Response # 80.

84. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.2.3 Page #: 10 Line #: NA Code: C
Original Comment #: 68
Comment: As stated in Ohio EPAs comments on the previous version of this document, ICs for the OSDF should include corner and mid point granite monuments establishing the boundaries of engineered barrier. These monuments should specify the disposal facility and contents, etc. in a similar manner to those placed at UMTRA disposal sites.
Response: The OSDF will be fenced. Notices will be placed on the fencing and contact information will be provided in the event anyone should have questions regarding the facility.
Action: None required.

85. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 2.2.3/Graphic 8131.5 Page #: NA Line #: NA Code: C
Original Comment #: 69
Comment: Include a Figure #. The legend does not define the red circles on the Graphic. Are the red circles illustrating a fence around each building?
Response: The red circles are fences, as indicated by the red line in the legend.
Action: Figure # will be included.

86. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Table 2-2 Page #: 12 Line #: 2. Engineered barriers Code: C
Original Comment #: 70
Comment: The Ohio Administrative Code also has requirements for signage, fencing and property set backs that apply to closed solid waste landfills. These have been cited as ARARs in the OU2 ROD. The OU2 ROD should be consulted and relevant ARARs should be included in this table.
Response: The OU2 ROD is currently referenced in the LMICP. The ARARs that pertain to the OSDF are listed in a table in Section 2.2 of the PCCIP (Attachment B to the LMICP).
Action: Reference to the PCCIP, Section 2.2 will be included in the text.

87. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Table 2.2 Page #: 12 Line #: Code: E
Original Comment #: 71
Comment: The heading for the last two items in the first column should be changed from "Preventing the unauthorized use of the FCP" to "Preventing unauthorized access to the OSDF".
Response: Agree.
Action: Text in table will be revised as suggested.

88. Commenting Organization: Ohio EPA Commentor: DSW/OFFO
Section #: 3.1.2 Page #: 14 Line #: last sentence Code: C
Original Comment #: 72
Comment: The text states, " If prior to completion of the remedy it is decided that it is no longer necessary to monitor a particular outfall location, it may be removed from the permit at that time." The use of the passive voice in this sentence obscures the fact that Ohio EPA issues the NPDES permit, which cannot be unilaterally altered by the permitee. We suggest re-working the last two sentences to make the meaning (a permit is no longer necessary after discharge has permanently ceased) clear. The standard procedure would be for the permitee to request a permit change.
Response: Agree.
Action: Text will be revised as suggested for clarification.

89. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.2 Page #: 15 Line #: NA Code: C
Original Comment #: 73
Comment: The first sentence states, "ICs will be established..." What future activity is being referenced here?
Response: "ICs will be established..." is referring to the fact that prior to closure, all ICs for the OSDF will be in place.
Action: The text will be revised to remove future tense, thus eliminating any confusion.

90. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.2.1 Page #: 16 Line #: 1st paragraph Code: C
Original Comment #: 74
Comment: The text states that the OSDF will be inspected quarterly until closure and then the frequency of inspections will be re-evaluated. Later in the text (page17 last part of last paragraph in Section 3.2.1) the text states that the decision to decrease the frequency of inspections would only be made at a CERCLA five-year review. The text on page 16 should be changed to make it consistent. Table 3-2 on page 20, fourth column, first row has the entry "Quarterly until closure, semi-annual". The words 'semi-annual' should be struck.
Response: Agree.
Action: The text will be revised to ensure consistency and clarity.

91. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 3.2.1 Page #: 16 Line #: 2nd paragraph Code: C
Original Comment #: 75
Comment: The first sentence lists several items to be included in routine OSDF inspections. Add to this list monitoring for the presence of deep-rooted, woody species.
Response: Agree.
Action: Items will be added to the monitoring list as indicated.

92. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Table 3-2 Page #: 20 Line #: last column, 'Scope' Code: C
Original Comment #: 76
Comment: Under item #1, 'Detect and record any changes to the following:' the terms 'settlement' and 'subsidence' each have their own bullets. Is it important to make a distinction between the two? If so, the distinction should be explained somewhere in the text. If not, we suggest combining the two bullets into one.
Response: Agree.
Action: Text in table will be revised for clarification.

93. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.0 Page #: 23 Line #: last paragraph Code: C
Original Comment #: 77
Comment: The text requires clarification in that any repair required by a failure of an IC such as sign removal/disfiguration should be reported and addressed in the time frames referenced in the above paragraph. In general, Ohio EPA believes that immediate reporting of all such actions, at least in the early stages of post "closure" management, are important to establishing the level of effectiveness of the ICs.
Response: The LMICP as written does state that OLM will notify U.S. EPA and Ohio EPA immediately in the event any breach of an IC occurs. Only minor maintenance actions such as: road repairs, fencing/gate

repairs, and minor repairs to facilities would not be reported. The intentional removal of signs would be considered a potential IC breach and the Agencies would be notified. Existing text adequately addresses this issue.

Action: None required.

94. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 5 Page #: 25 Line #: NA Code: C
Original Comment #: 78
Comment: Considering the massive amount of data and information generated at the site this section seems to be insufficient in scope and detail. How will the large databases of sample and waste data be maintained? Will searchable maps of the site be generated that allow future stewards to review pre and post remediation soil concentrations? How will databases be updated to ensure they aren't lost to changes in technology?
Response: Details regarding data management, data and records access are still being discussed/reviewed. OLM currently maintains the GEMS system for managing and accessing data for all previous closure sites including Weldon Spring. It is likely that the same or a similar system will be used for the FCP site. Since the GEMS or any future replacement system will contain remediation and historical environmental monitoring data for al closure sites, it is reasonable to assume the OLM will maintain and update systems software for the foreseeable future.
Action: As further detail regarding data management and access becomes available, it will be included in the LMICP.

95. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 5.3.1 Page #: 26 Line #: NA Code: C
Original Comment #: 79
Comment: This section on reporting suggests that the IEMP reporting requirements will be integrated into the ICP's final version. Ohio EPA would expect that the integration would take place sooner than the final ICP document, especially due to the involvement of reporting responsibilities the IEMP encompasses (including the aquifer remediation). Also, considering the IEMP is referred to and referenced throughout the ICP, and due to its ongoing monitoring activities, the IEMP must be made part of the ICP as a supporting document. The IEMP should be included in the list of supporting "enforceable" documents in Section 1.1 on page 3 and included as an appendix.
Response: In Volume 2, p. 26, Section 5.3 it is stated that the IEMP will be included as an attachment to the final version of the LMICP. It is anticipated that Revision 4 of the IEMP will be included as an attachment in the February 2005 revision of the LMICP. If Revision 4 of the IEMP is not completely finalized or approved, the IEMP will be included as an attachment to the LMICP in January 2006. As indicated, an update of the LMICP will occur in January 2006 prior to closure.
Action: As indicated in the response.

96. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Appendix C Page #: 9 Line #: NA Code: C
Original Comment #: 80
Comment: Appendix C should be expanded. It will have to be expanded in the future, as contacts and organizations of additional site stewards and stakeholders grow. This information could be presented in a more effective manner by listing the organizations involved in site stewardship, their function and the names of contact. Regulatory agency contacts should be included.
Response: It is stated in the text of the Appendix that it will be updated as necessary and as information becomes available.
Action: Information will be added as it becomes available. Information will be placed in tabular form with contacts listed.

97. Commenting Organization: Ohio EPA Commentor: DSW
Section #: Appendix D Page #: FCP Site Area Check. Line #: 1G Code: C
Original Comment #: 81
Comment: Although the Indiana Bat has only been found in the northern portion of Paddys Run, it is anticipated that restoration activities will improve downstream areas to increase suitability for use by the Indiana Bat.

Therefore future inspections should include downstream areas as well. As inspections will include downstream areas to assess conditions for 1E and 1F, there will be no added burden to include observations to fulfill the requirements for 1G.

Response: Agree.

Action: Table will be revised to include inspections of new habitat for the Indiana Bat in Paddys Run.

98. Commenting Organization: Ohio EPA Commentor: DSW
Section #: Appendix D Page #: FCP Site Area Check. Line #: 1G Code: C
Original Comment #: 82

Comment: The site has a population of Sloan's Crayfish in the northern reaches of Paddys Run that disturbances could adversely effect. A line item to verify that no disturbances that could adversely effect this population should be included in this section.

Response: The Sloan's Crayfish status as a State Threatened Species does not require its protection; however, its habitat is in the same portion of Paddys Run that is protected for the Indiana Bat. Protection of the Sloan's Crayfish will occur as a result of protecting habitat for the Indiana Bat.

Action: Table will be revised to include monitoring the habitat for the Sloan's Crayfish.

99. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Appendix D Page #: FCP Site Area Check. Line #: 2B Code: C
Original Comment #: 83

Comment: The checklist only suggests inspecting perimeter areas to verify prohibited activities are not occurring. A perimeter search is unlikely to be sufficient to ensure IC violations are not occurring. Interior areas should be inspected as well to ensure prohibited activities are not occurring. Revise the checklist.

Response: Agree. Perimeter was intended to refer to areas outside the OSDF.

Action: The word "perimeter" will be removed and text will be modified to state that all areas of the site will be inspected for prohibited actions.

100. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Appendix D Page #: FCP Site Area Check. Line #: 4H Code: C
Original Comment #: 84

Comment: Define "Post-Closure Coalition."

Response: Agree.

Action: "Post-Closure Coalition" will be defined in the text.

ATTACHMENT A – OMMP

101. Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section #: 2.1.1 Page #: 2-3 Line #: 20 Code: C
Original Comment #: 85

Comment: DOE indicates that re-injection provides minimal benefit as recent modeling conducted by the agency has shown that continuing well-based re-injection will only reduce the total time required to complete the remediation by three years. The analysis considered only the merits of the current re-injection well configuration. DOE concedes that stopping the fenceline re-injection wells will result in the formation of a stagnation zone between the South Field and South Plume extraction wells. It is evident that re-injection is the only viable approach to help address this condition over the long term. Given the 20+ year time frame of the groundwater remediation project, re-injection should be also be preserved as an option for selective conversion of extraction wells to re-injection mode as required. The key benefits for retaining the re-injection option implemented in this way are :

- Faster flushing between extraction wells,
- Increased capability to cleanup contaminated aquifer material, and
- More effective treatment of aquifer heterogeneity.

Faster flushing between extraction wells. In addition to the large stagnation zone that will form between the South Field and South Plume when fenceline re-injection is stopped, the areas between adjacent extraction wells are also zones where flushing will be slowed. If all wells are operated only in

extraction mode, adjacent wells will compete for water. A particle tracking analysis was conducted in the South Field area. Particles were placed within all of the top layer model cells located in a zoomed area in the South Field. The Time To Capture (TTC) for each model cell is the time required for a particle placed in that cell to be captured by an extraction well. TTCs were computed for the same extraction pumping scheme (Period 4, Approach C, Table 2.1.1 of the Draft Groundwater Remedy Evaluation and Field Verification Report) first with and then without re-injection. A map of the TTC re-injection to no re-injection ratio (computed by dividing the TTC without re-injection by the TTC with re-injection) is shown in the figure below and indicates the areas where the aquifer cleanup time is increased. Cleanup times are increased by 50 percent or more within a significant portion of the zoom area.

Increased capability to cleanup contaminated aquifer material. The pumping-induced movement of groundwater through contaminated aquifer material results in mass transfer from the aquifer to the groundwater. The rate of mass transfer is greater for the same contaminated aquifer material containing low concentration groundwater than for high concentration groundwater. Re-injection moves lower concentration water into contaminated aquifer zones and accelerates the cleanup of these zones.

Re-injection also provides the potential capability to directly control and manipulate geochemical conditions. The Sandia reports provide new information regarding how uranium is partitioned on the aquifer sediments. As most sorbed uranium is associated with carbonate minerals in the aquifer, re-injection could, if appropriately engineered, provide a viable option for influencing carbonate geochemical conditions within the contaminant plume area.

More effective treatment of aquifer heterogeneity. As a result of the lithologic variability of the GMA, preferential flow pathways are established during pumping and it is these pathways that get flushed of contamination the most. The conversion of selected extraction wells to re-injection mode is the most effective approach for changing groundwater flow patterns to address portions of the aquifer away from the preferential flow pathways.

Response: As discussed with OEPA at various meetings during the past year, well-based re-injection is no longer considered an economical option for the aquifer remedy. It will cost approximately $3 million dollars a year to operate the CAWWT. The CAWWT must be operated at least until discharge limits can be met at the Parshall Flume without water treatment. Operation of the CAWWT past this time, just to support re-injection, would make re-injection a very costly remedy supplement. The predicted benefit (three years off the time needed to achieve cleanup objectives) does not justify the anticipated operational costs.

DOE intends to maintain an aquifer remedy that is fully compliant with the Operable Unit 5 Record of Decision and to accelerate the aquifer remedy with other operational approaches when deemed appropriate. For instance, re-injection is not the only viable approach available to address the subject stagnation zone. Pulse pumping is also an option that could and will be considered. In addition, DOE has an ongoing effort, in collaboration with OEPA, to evaluate the use/benefits of enhancing recharge through the bed of the Storm Sewer Outfall Ditch.

Action: No change to the OMMP required at this time.

102. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 3.2.3 Page #: 3-8 Line #: NA Code: C
Original Comment #: 86

Comment: The CAWWT is scheduled to be operational until 2015. What provisions for sanitary sewage are being made for the operator(s) of this facility (note that the Ohio EPA does not allow the use of holding tanks except in very limited instances)?

Response: As a part of the design for the CAWWT, DOE has proposed using a sanitary wastewater holding tank to address the collection and disposal of sanitary wastewater from CAWWT support and operations personnel. DOE believes the use of a holding tank is appropriate in this situation, as no other alternatives have been identified that both serve the site population and are consistent with DOE's objectives of completing remedial actions and eventually closing the FCP. Sanitary sewer

service is not available in the area of the FCP and the construction of a septic system with leaching field is not appropriate for the FCP given the extensive remediation that has been conducted and the expectations of Fernald Stakeholders relative to long-term stewardship of the site and future uses.

The FCP has used holding tanks successfully during the remediation phase of the FCP. The holding tank in question will implement several design features and DOE will establish several administrative and engineered controls that will ensure the proper operation of the tank, mitigate against the development of a nuisance, and ensure the proper ultimate disposition of the collected sanitary wastewater. These features and controls include:

- The tank will be equipped with a high level alarm to indicate when the tank reaches 2/3's of the tank capacity
- A grinder pump will be implemented to receive the sanitary wastewater and pump the wastewater into the holding tank to facilitate the complete removal of the contents from the holding tank
- DOE will contract with a licensed septic hauler to ensure the proper disposition of the holding tank contents. Receiving facilities are readily available
- Access to the tank will be ensured during all weather conditions. Additionally, the tank will be protected with an engineered enclosure.

Action: DOE will continue to work with OEPA to resolve this issue.

103. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 3.4.1.1 Page #: 3-12 Line #: NA Code: C
Original Comment #: 87
Comment: Here, and other locations in the document, it is stated that bypassing and overflows will no longer be permitted. Some of the bypasses occur during plant maintenance activities. How will water handling occur during maintenance activities once bypassing is no longer permitted?
Response: This comment is similar to OEPA Original Comment # 93. Please refer to the Response and Action for OEPA Original Comment # 93 (Comment Response # 109).
Action: As noted in the Action for OEPA Original Comment # 93 (Comment Response # 109).

104. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 3.6.2 Page #: 3-16 Line #: NA Code: E
Original Comment #: 88
Comment: Add ESD to the acronym list.
Response: Agreed. ESD will be added to the acronym list
Action: As stated in response.

105. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.0 Page #: 4-1 Line #: last bullet Code: C
Original Comment #: 89
Comment: The Ohio EPA does not allow the use of holding tanks except in very limited instances. Consideration should be given to use of portable chemical toilets or on site leach field systems.
Response: DOE does not believe it appropriate to design and install a leach field system given the extensive remediation of the site at considerable tax-payer expense. The installation of such a system is inconsistent with the remedies agreed to for the FCP. The use of chemical toilets poses the same type of risk that a holding tank does relative to in-attention and unscrupulous waste haulers. The use of a holding tank is a more appropriate way of supporting site personnel over a relatively long period of time compared to portable chemical toilets.
Action: DOE will continue to work with OEPA to resolve this issue.

106. Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section #: 4.1.1 Page #: 4-2 Line #: 16 Code: C
Original Comment #: 90
Comment: On what basis will the well pumping rates be modified? How will plume capture be verified for the new rates?

Response: The basis for modifying well pumping rates is achieving discharge limits at the Parshall Flume, maintaining uranium plume capture, and achieving well field operational objectives. Well field operational objectives are presented in Section 5.5 of the OMMP. Plume capture will be verified as it has been in the past using interpretations made from water level maps. Quarterly uranium plume capture interpretations are presented in the annual ISER reports. More frequent capture interpretations will be made if deemed appropriate based on the degree of the pumping rate modification that is implemented.

Action: No change to the OMMP required.

107. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.3.1 Page #: 4-4 Line #: NA Code: C
Original Comment #: 91
Comment: The "Cement Pond" also captures flows from the silos as well as the Waste Pit area.
Response: Agree. The commentor is referred to the second sentence under "Waste Pit Area Runoff Control (WPASRC) Facility," which states: "This facility also collects area runoff from around the Silos Project.
Action: No action required.

108. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.3.2 Page #: 4-6 Line #: NA Code: C
Original Comment #: 92
Comment: The statement that up to 3 million gallons of wastewater may require treatment from the silos appears to be inconsistent with other statements made by the OU 4 project that no wastewater will be generated from the silos project.
Response: Agree. The draft OMMP Revision 2 was written in June 2004 and reflects the planning at that time. Since then, the Silos Project has developed a method of recycling their process water thereby eliminating the need for treatment of this water.
Action: The Silos Project Wastewater Section will be revised to reflect the current planning/volume estimates.

109. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 5.4.1 Page #: 5-4 Line #: last sentence Code: C
Original Comment #: 93
Comment: In section 3.4.1.1 and elsewhere in the document, it is stated that bypassing and overflows will no longer be permitted. However, in the operational charts and in these sections, provisions are made for an SWRB overflow. Although we agree with the concept of providing for contingencies, we are not comfortable with the inconsistency in the document. If there is the potential for bypasses and overflows to occur, they should be addressed. Also, current operational practice is to bypass SWRB to the Great Miami River (GMR) to try to prevent an overflow to the SSOD. This operational plan changes the priority to allow an overflow without attempting to prevent it by pumping directly to the GMR. What is the justification for this change.
Response: Comment acknowledged. DOE will revise the document to indicate that under extreme circumstances the water from the SWRB may have to be bypassed in an effort to prevent an overflow and that an overflow is still possible – however very unlikely. Based on response of the basin to various rainfall events during 2004 and the information provided below, DOE is confident that the basins can be managed such that bypassing and/or overflow of the basin will not occur unless a catastrophic rainfall event or an extended treatment system outage is experienced at the site.

The areas currently draining to the SWRB by gravity have been reviewed and it appears that the gravity drainage area is even less than that noted in the Draft OMMP Rev.2, Table 4-2. The only areas currently draining by gravity to the SWRB are the portion of Area 6 just to the north of the Former Production Area and the periphery of Area 3A. This acreage is estimated to be about 40 acres. As noted in the Draft OMMP Rev. 2, Table 5-1, the SWRB capacity is about 10.9 million gallons. For every inch of rain on a 40-acre area, approximately 1.1 million gallons of water would be generated. Conservatively assuming 100% of this water runs off to the SWRB, an empty SWRB could hold a 9.9-inch rain event. Using a more realistic runoff coefficient of 0.6, an empty SWRB could hold a

16.5-inch rain event, which is somewhat greater than the 2000-year 24-hour storm amount of 13.0-inches of precipitation. The 100-year 24-hour storm for the Cincinnati area is 5.7 inches of precipitation. Assuming 100% runoff from a 100-year storm, about 6.3 million gallons of storm water would be generated, well below the holding capacity of the SWRB.

Action: DOE will revise the Draft OMMP to indicate that under extreme circumstances the water from the SWRB may have to be bypassed without treatment to the Great Miami River in an effort to prevent an overflow and that an overflow is still possible.

110. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 5.4.7 Page #: 5-7 Line #: NA Code: C
Original Comment #: 94
Comment: What provisions are being made in the CAWWT for resin that may be discharged out of the ion exchange vessels? Will there still be a "resin trap" available?
Response: The resin trap that was used for the AWWT Phase III system is being relocated and will be used for CAWWT. This resin trap is fully instrumented and will function on the CAWWT system as it did on the AWWT Phase III system. The resin trap is specified in the CAWWT Stage I Design Package, which was provided to OEPA in August 2004.
Action: No action required.

111. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 5.9 Page #: 5-10 Line #: NA Code: C
Original Comment #: 95
Comment: "After WPP shipping is complete, an alternative disposal method must be developed" is not an appropriate statement for a COMPREHENSIVE LEGACY MANAGEMENT AND INSTITUTIONAL CONTROLS Plan. The disposal methods that are to be considered/used should be stated in this document.
Response: Agree. The planned disposal methods will be outlined in the revised OMMP. In general it is planned that the above OSDF WAC waste material from AWWT/CAWWT will continue to be shipped to Envirocare until site closure – via rail until that option no longer exists and then by truck. After site closure, the CAWWT wastes will continue to be shipped via truck to a licensed commercial disposal facility such as Envirocare or possibly to the Nevada Test Site.
Action: As noted in the response.

112. Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section #: 6.2 Page #: 6-5 Line #: 9 Code: C
Original Comment #: 96
Comment: This section should be revised to indicate the maintenance operations that will be applied to re-injection wells and to extraction wells that have been operated in re-injection mode.
Response: Re-injection wells are no longer being used at the site, therefore specification of maintenance operations for re-injection wells are not needed. If, in the future re-injection wells are used at the site then the OMMP will be revised to include maintenance protocol for re-injection wells.
Action: As noted in the response.

113. Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section #: 6.3.2 Page #: 6-8 Line #: NA Code: C
Original Comment #: 97
Comment: The second paragraph of this section appears to describe scenarios when bypassing may need to occur. This appears to be in conflict with statements elsewhere in the document that indicate that bypassing and overflows will not be permitted. Please explain.
Response: This comment is similar to OEPA Original Comment # 93. Please refer to the response and action for OEPA Original Comment # 93 (Comment Response # 109).
Action: As noted in the response.

114. Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section #: Appendix B Page #: NA Line #: NA Code: G
Original Comment #: 98
Comment: This section should be revised to indicate the maintenance operations that will be applied to re-injection wells and to extraction wells that have been operated in re-injection mode.
Response: This comment is similar to OEPA Original Comment # 96. Please refer to the response and action for OEPA Original Comment # 96 (Comment Response # 112).
Action: As noted in the response.

ATTACHMENT B – PCCIP

115. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Prologue Page #: vi Line #: NA Code: C
Original Comment #: 99
Comment: The text states that this plan was developed with a specific focus on the OSDF and then goes on to state that the scope could be expanded as needed to encompass the entire FCP site. It is not clear how the expansion of scope will intersect with other Plans such as the Legacy Management Plan and the Institutional Controls Plan.
Response: Agree. The LMICP and other attachments address the remainder of the site. Focus of the PCCIP will remain on the OSDF only.
Action: Reference to expansion of scope will be deleted.

116. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.1 Page #: 1-1 Line #: NA Code: C
Original Comment #: 100
Comment: The text provides a bulleted list of facilities and structures covered under this Plan. The OSDF leachate management structures (valve houses, leachate transmission lines, lift station control valve houses, etc.) should be added to the list.
Response: DOE acknowledges the comment. Inspections of the leachate management system were removed from the PCCIP for the July 2004 revision, with the intent being to have them incorporated into the OSDF GWLMP.
Action: Inspections of the leachate management system will be included as Appendix C to the OSDF GWLMP in the February 2005 revision of the LMICP. Future updates will be made in revisions, as necessary.

117. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 3.3 Page #: 3-6 Line #: NA Code: C
Original Comment #: 101
Comment: Include monitoring wells, perhaps under permanent site surveillance features. The piezometers, depth markers, etc. in the constructed wetlands should be included.
Response: Monitoring wells, piezometers, etc for the OSDF are addressed in the GWLMP.
Action: None required.

118. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 3.5 Page #: 3-8 Line #: NA Code: C
Original Comment #: 102
Comment: Similar photo records should be made of other areas of the site to document topographic changes (erosion, subsidence, uplifting, etc.), other surface feature and vegetative changes.
Response: Agree.
Action: Consideration will be given to incorporating photographs into inspections of other site areas. This information will need to be incorporated into the Institutional Controls Plan (Volume 2) of the LMICP.

119. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 3.5 Page #: 3-8 Line #: NA Code: C
Original Comment #: 103
Comment: DOE should consider placing the Fernald site inspection photos, monitoring data, etc., on the Internet. This would provide the public with more timely information. This idea was presented in a meeting about two years ago, where folks from Grand Junction presented how data and site information could be set up on web sites for DOE closure sites.
Response: Agree.
Action: DOE will consider making inspection photos accessible via the Internet. It has already been determined that environmental data will be accessible via the internet. The data will more than likely be maintained electronically through the Grand Junction Office using the GEMS system, or another similar program.

120. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.5 Page #: 4-3 Line #: NA Code: C
Original Comment #: 104
Comment: As indicated previously, transfer of ownership should not occur.
Response: Agree. The Federal government will maintain ownership of the FCP site. However, there could be a transfer of responsibility or management between federal agencies. In the event that should occur, all responsibility for the property would transfer to the new agency.
Action: Text will be revised to clarify this issue.

121. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 5.4 Page #: 5-2 Line #: NA Code: C
Original Comment #: 105
Comment: Due to the nature of the surrounding area (an undeveloped park with several water features), periodic sampling of surface water and analysis for constituents of concern should be included in the post closure plan for the OSDF.
Response: Surface water sampling and analysis requirements are and will be included in the IEMP, which will become an attachment to the LMICP.
Action: The IEMP will be included as an attachment to the LMICP as indicated in Comment Responses # 16 and 22.

122. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 5.4 Page #: 5-2 Line #: NA Code: C
Original Comment #: 106
Comment: All post closure activities should be included in a single document. It is not reasonable to expect future generations to have to reference multiple documents for guidance in post closure maintenance. The monitoring should either be included in sections in this document (preferred) or the referenced documents should be included in this document as appendices (e.g. the IEMP).
Response: The goal of the LMICP is to have it be a "one-stop shop" for all legacy management activities, including monitoring.
Action: The IEMP will be attached to the LMICP as indicated in Comment Responses # 16 and 22.

123. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 6.2.2, 7.2.1, 8.3.2 Page #: 6-3, Table 7-1, 8-2.4 Line #: NA Code: C
Original Comment #: 107
Comment: No mention is made nor criteria established for the vegetative cover to be seeded native plants. The inspections should include a measure of the percent cover of seeded native vegetation and corrective actions to be taken to achieve the required percent cover if it is found to be below the required amount. Likewise, maintenance and repair activities (e.g. mowing, erosion repair, reseeding, etc) should be specified to maintain/increase the percent seeded native cover.
Response: Existing text does include the inspection of the vegetative cover to ensure that general health and density is adequate. Effectively managing the OSDF as a native prairie in perpetuity would require burning on a regular rotation. Burning the OSDF has been identified as potentially problematic by all parties involved and was not part of the original agreement regarding the seeding of native grasses on

the OSDF Cap. Mowing and baling could be implemented on the OSDF Cap to remove thatch and support prairie establishment, but mowing and baling would not be as effective at controlling invasive species as burning. The long-term management of the OSDF will continue to be discussed with OLM and any additional detail will be included in the final version of the LMICP.

Action: None required.

124. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.2.2 Page #: 6-3 Line #: NA Code: C
Original Comment #: 108
Comment: This section lists items to be checked during routine scheduled inspections.
The following two additions should be made:
1) The monitoring devices on the Cell 1 cap. There are several different types of monitors. They should be checked for the presence of nesting animals, subsidence, etc. A note should also be made to check that the monitors do not function as the initiation point for erosion gullies.
2) The leachate transmission system. Currently the LTS consists of the valve houses, lift station, control valve house and the double-contained HDPE piping system and the Bio-Surge Lagoon and waste water treatment system. As leachate volumes decline in the coming years, this system will likely evolve to a passive system and a collection tank. In either case, the structures should be checked to verify that they are performing as designed.

Response: The monitoring devices on the cell 1 cap are already included on the inspection checklist for the Cell 1 cap (See LMICP, Volume 2, Appendix D). It is anticipated that the monitors on the Cell 1 cap will be abandoned in place, as it has been determined that they are not needed.

See Comment Response # 116 regarding the LTS.

Action: Determine best document for inclusion of LTS inspection requirements and include it prior to January 2006 revision of LMICP.

125. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.2.2 Page #: 6-3 Line #: NA Code: C
Original Comment #: 109
Comment: An inspection of the leachate management system should be added to this list. In the current configuration, the Valve Houses would be inspected for signs of vandalism or entry; the permanent Lift Station pumps and backups would be inspected and serviced; the double-contained LTS pipes and the laterals to the cells would be inspected for water in the annular space, etc. It should be noted that changes to the configuration of the leachate conveyance system are likely to be made in the future and that changes will need to be made to the inspection checklist.

Response: DOE acknowledges the comment. Inspections of the leachate management system were removed from the PCCIP for the July 2004 revision, with the intent being to have them incorporated into the OSDF GWLMP.

Action: Inspections of the leachate management system will be included as Appendix C to the OSDF GWLMP in the February 2005 revision of the LMICP. Future updates will be made in revisions, as necessary.

126. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: slopes Page #: 6-5 Line #: 1st Code: C
Original Comment #: 110
Comment: The text describes the inspections to be performed on the slopes of the OSDF. Only two walking traverses are specified in this Plan; a traverse along the toe of the slope and at least one traverse on the upper slopes.

The quarterly inspections of the Cells 1 and 2 caps performed to date have involved a dozen people walking traverses ten feet or so apart. The direction of the traverses alternates from north-south one quarter to east-west the following quarter.

We suggest re-writing this section to accommodate two conflicting realities: one traverse along the slope is likely to miss erosion features that are unacceptably large while traverses on ten-foot centers are

impractical unless there are a dozen inspectors. The re-write should include a scheme to stagger the routes of inspections so that any given area of the cap is inspected in rotation.

Response: Agree.

Action: Text will be revised for clarification. Also, a review of the LMICP will be conducted to ensure consistency of the requirements throughout the IC Pan and the PCCIP.

127. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Table 7-1 Page #: 7-2 Line #: NA Code: C
Original Comment #: 111
Comment: According to Section 2.6.2 of the OSDF Design Criteria Package (DOE, May 1997) the maximum root depth of the vegetative cover species should not exceed the depth of the vegetative soil layer. The table should be modified and in place of 'invasive species' there should be headings for both 'trees' and 'deep-rooted species'. The 'Representative Response' for the deep-rooted species should contain references to activities such as mowing or the application of herbicides. The Response for trees should include cutting, etc. We note that if scheduled mowing is conducted regularly, the growth of the undesirable species should be prevented.

The Representative Response text mentions that analysis for rads will be an option if deep-rooted species are observed. We agree that this is an option if there are indications that the vegetation has penetrated the nearly 9-foot thick cap. Establishing a list of species that typically send deep roots might be more cost-effective than just analyzing samples of all deep-rooted vegetation.

Response: The OSDF will not be seeded with any species that have an unacceptable root depth. The approving seeding specification takes root depth into consideration. During LM, surveillance of the OSDF will include the identification and removal/management of any deep-rooted species. Table 7-1 currently addresses deep-rooted species. Annual mowing of the OSDF caps is required in the PCCIP to remove any woody species. A note will be added to the table to prevent the use of deep-rooted species during reseeding if required.

Action: Add text to Table 7-1 as noted above.

128. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Table 8-1 Page #: NA Line #: NA Code: C
Original Comment #: 112
Comment: Check both footnotes for spelling.
Response: Agree.
Action: Spelling in footnotes will be corrected.

129. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 8.3.2 Page #: 8-2, 8-3 Line #: NA Code: C
Original Comment #: 113
Comment: This section discusses custodial maintenance and repair of the cap and final cover system. The entire section requires re-writing after consulting Section 2.6 of the Design Criteria Package for the OSDF.

The design criteria for the final cover vegetation include the following:

- minimize erosion and off-site sedimentation
- the maximum root depth should be less than the depth of the vegetative soil layer
- the vegetation should not attract wildlife, to the greatest extent possible
- vegetation in the drainage channels should be able to withstand temporary inundation
- low-maintenance, self-sustaining vegetation that is drought resistant and conforms to the surrounding landscape

In addition, the following ARARs relevant to this discussion are listed in Section 2.6.1 of the DCP:

- minimize liquid infiltration
- function with minimal maintenance
- minimize erosion

Part B of this section briefly describes a process to choose suitable plant species and develop seed mixes appropriate to achieving the design objectives.

Currently Cell 1 is well-covered with a mix of predominantly wild invasive species and at most a few percent forbs/prairie grasses. Cell 2 was covered with a lovely crop of annual rye which has recently (this is being written in mid-September) dropped its seed and been replaced by wild invasives. Fewer forbs/prairie grasses are present on Cell 2 than are on Cell 1. We note that the seed blends used did in fact contain desirable species and conclude that the management of the crop was inadequate to promote the succession from temporary cover to desirable grasses/forbs.

In addition, we conclude that the current cover crops on the first two cells of the OSDF meet the design intent for erosion control, root depth, and attractiveness to wild life. Lacking is a cover of low maintenance, self-sustaining, drought-tolerant vegetation. The invasives present are opportunistic to the extent that they will spontaneously establish themselves when conditions are favorable to their growth but they do not tolerate dry conditions. In the event that Hamilton and Butler counties suffer several seasons of drought, the invasives will suffer to the extent that erosion control will be severely compromised when the rains inevitably return.

The deep roots of prairie grasses help in achieving two of the design goals: drought tolerance and erosion control. Once established, the prairie grasses also achieve the design goal of low maintenance since Spring mowing will be the only routine maintenance necessary to control trees.

To date, we have been unsuccessful in establishing a protective cover of prairie grasses. A seed drill was used to apply a mix of annual rye, prairie grasses and forbs to the Cell 2 cap. The seed was protected by a combination of coir and jute matting which proved successful in holding the seed in place and also preventing erosion prior to the establishment of adequate cover. The lessons learned in placing and staking the matting on Cell 2 should be retained in future caps. A hardy stand of rye was satisfactorily established but the succession to prairie species was not observed. We speculate that the seed mix was too rich in annual rye seeds and the rye out competed the prairie species. The satisfactory performance of the matting on the Cell 2 cap should be taken into consideration when designing future seed mixes. It may prove desirable to reduce the fraction of annual rye, whose use is mainly to reduce short-term erosion until the succession vegetation is established. No fertilizer or supplemental watering were performed on either cap. Grass cutting performed to date occurred in the Fall and was performed to facilitate inspections and not to promote the prairie species.

To the best of our knowledge, Cell 3 will be seeded in the Fall of 2004, Cell 4 in the Spring of 2005 and Cells 5, 6, 7, and 8 will be seeded during the Spring/Summer of 2006. The FCP will be responsible for the initial seeding but the final cover will be established while the OSDF is the responsibility of the Legacy Management Program.

This section should be re-written starting with developing a new seed mix following the process outlined in the DCP. Seeding and matting plans should be developed using lessons learned from previous Cells. A crop management plan should be developed whose objective is the establishment of a low maintenance, drought tolerant vegetative cover crop satisfies the original design criteria. The plan should include a monitoring regime that will help direct management actions to facilitate establishment of the permanent vegetative cover.

Response: Native prairie grasses were seeded on the Cell 1, 2 and 3 per the approved seeding specification. The Cell 1 Cap has just completed its third growing season and prairie grass is starting to become more prominent. Management of the Cell 1 Cap, in the form of annual mowing and control of noxious weeds, has been performed as required. Experience in other areas of the site has shown that it takes a minimum of three growing seasons for prairie grass to emerge and commonly takes a fourth or fifth growing season. There was no expectation that prairie grass would appear on the Cell 2 this year (i.e., the first growing season). Watering was not required on Cell 1 or 2 during or immediately following seeding due to weather conditions. Watering occurred during the seeding of the Cell 3 cap due the lack of rainfall during that time. The concentration of rye in the seed mix does appear to be appropriate given that short-term erosion control is a very high priority in seeding the OSDF Caps.

The management of the OSDF Cap as native prairie was discussed at the time the decision was made to use native prairie grasses. The requirement for a low maintenance, self-sustaining vegetation does not support the use of native grasses that will require some form of management beyond routine mowing every three years, at a minimum. All parties agreed that burning the OSDF Cap would be problematic and no commitments were made to that affect (see Comment Response # 127). A routine of mowing and baling may be possible on the OSDF Cap, but would not be as effective at controlling invasive species and maintaining prairie grasses.

The Cell 5 & 6 Cap will be seeded in the late fall 2005. The Cell 7 & 8 caps will be seeded in early spring 2006.

Action: Long-term management of the OSDF Cap will continue to be discussed with OLM and more detail will be included in the final version (January 2006) of the LMICP.

130. Commenting Organization: Ohio EPA Commentor: DSW
Section #: 8.3.2 Page #: 8-5 Line #: NA Code: C
Original Comment #: 114
Comment: Mowing should precede the inspection to facilitate observation of any anomalies in the cap, but should not occur so early as to adversely effect the seeding of native plants.
Response: Agree.
Action: Text will be revised to clarify the goals and the risks of mowing.

131. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 8.3.2 Page #: 8-6 Line #: step # 3 Code: C
Original Comment #: 115
Comment: Since the term 'vegetative soil layer' is used in all the design documents, it is preferable to strike all uses of the 'rooting soil layer' and replace them with 'vegetative soil layer'.
Response: Agree.
Action: "Rooting soil layer" will be replaced with "vegetative soil layer". A global search and replace will be conducted.

132. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 8.3.3 Page #: 8-7 Line #: NA Code: E
Original Comment #: 116
Comment: Correction. The reference made, in the first paragraph of this page, needs to be changed to Section 8.3.2 rather than 9.3.2.
Response: Agree.
Action: The reference will be corrected.

133. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 11.2 Page #: 11-1 Line #: last bullet Code: C
Original Comment #: 117
Comment: Strike the bullet which reads, "Temporary suspension or permanent deletion of one or more post-closure care requirements." This was not cited as an ARAR in the OU 2 ROD.
Response: The text was not sited in the OU 2 ROD. However, it was sited in the OSDF Permitting Plan as indicated in the table (item # 25) in Section 2.2 of the PCCIP under the sub-heading "Modifications to Post-Closure Plan or Period".
Action: None required.

134. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 4.3.2.2 Page #: 4-6 Line #: 2nd and last sentences Code: C
Original Comment #: 118
Comment: The second sentence states, "Fluids that accumulate from time to time in the LCS drainage layer above the primary liner are removed to further reduce the potential for leakage by minimizing the level of fluid of fluid build head build up in the primary liner."

The last sentence states, "In the event that fluids collect within the LDS layer, fluids drain to the west where they are removed and routed for treatment."

Comment 1 The term of art for fluids which collect in the drainage layer of a landfill is 'leachate'. This word should be used instead of the more general term 'fluids'.

Comment 2 The use of the active voice in these sentences betrays the lack of understanding of the design intent of a landfill drainage system. The LCS and LDS are free-flowing systems which are designed so that leachate drains without relying on the actions of an operator. In the post-closure operating mode, valves will be removed from the valve houses and replaced with straight pipes.

Both sentences should be replaced with language that accurately reflects the function and operation of the drainage layers.

The term 'leachate' should replace 'fluids' wherever appropriate.

Response: Leachate will replace the term fluids when referring to fluids yielded from the LCS layer, where it is an appropriate term. However, fluids will continue to be used to describe liquid that is yielded from the LDS layer. As discussed with OEPA, and as explained in various reports over the last several years, leakage of leachate through the primary liner of the OSDF cells is not the only source for the fluid yielded from the LDS layer of each cell. In the EPA Report of 1995 Workshop on Geosynthetic Clay Liners, Appendix F, several sources of flow from leak detection layers are identified. These sources include: top liner leakage, construction and compression water, consolidation water, and water from groundwater infiltration. The referenced t3ext will be clarified as requested.

Action: The final version of Revision 1 to be submitted in February 2005 will incorporate the items in the response. As noted in the response, fluids will be replaced with leachate where appropriate, i.e. when referring to liquid yielded from the LCS layer of each cell. Also the text will be clarified as follows: Second sentence: "By design, leachate that accumulates from time to time in the LCS drainage layer above the primary liner is drained by gravity out of the cells to further reduce the potential for leakage by minimizing the level of fluid build head build up in the primary liner." Last sentence: "In the event that fluids collect within the LDS layer, by design the fluids gravity drain to the west, out of the cells, where they are routed for treatment."

135. Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section #: 4.5 Page #: 4-29 Line #: 15 Code: C
Original Comment #: 119
Comment: As noted by DOE (the 2002 technical memorandum for establishing baseline conditions for Cells 1 through 3 and the 2003 SER), the installation of the impermeable cell liners and the control of surface water in the vicinity of the facility effectively eliminate infiltration to the perched water system. Upward trending concentrations (referred to as "aging water") in the horizontal till wells may, therefore, result from this lack of "fresh" water infiltration to the till underlying the facility. To assess/ verify the likelihood that the observed increasing concentrations observed in the horizontal till wells are the result of aging water phenomena, baseline and post baseline data collection activities at the site should include common ions (sodium, calcium, magnesium, manganese, potassium, iron, chloride, sulfate, phosphate, alkalinity, and pH). Significant upward trends in the common ions will provide supporting evidence that upward trends in leachate constituents result from the aging process.

Response: As indicated in the response to comments on the 2003 Site Environmental Report (Comment # 4), as the bulk of material in the cell is soil derived from the till, the major and minor ions in water will be similar for leachate developing in the cell and groundwater in the horizontal till wells. Additionally, the initial constituent list for monitoring the various horizons of the OSDF system were established in the OSDF Groundwater/Leak Detection and Leachate Monitoring Plan and were based on rigorous evaluation and selection process. Most of the cations and anions identified above would have similar concentrations in background perched water and OSDF leachate and; therefore, they have not been sampled in the different horizons for OSDF cells. Also, most cells are far into the construction process, if not already completed. Therefore, the ability to establish baseline conditions for these cations and anions would not be possible. The primary constituents monitored in association with the cells (boron, total organic carbon, total organic halogens, sulfate, and total uranium) are sufficient for detecting system leaks, as they represent ions that have the greatest potential for concentration differences between perched water (horizontal till wells) and OSDF leachate. In the event of a leak, the perched water will contain only a very small component of leachate; therefore, the leachate would have to have much higher concentrations than the perched water to have a noticeable impact on perched water concentrations. Substantial concentration differences are required if there is to be any detection of leakage via ion monitoring in the perched water, as indicated by OEPA in Comment 2 of OEPA Additional Comments on the 2003 Site Environmental Report, "Should a leak occur, its flow rate will most likely be very small, certainly less than the rate used in the hypothetical scenario." Therefore, a very low flow rate indicates that ions with similar order-of-magnitude concentrations in horizontal till wells and leachate will not be useful for monitoring. Specifically, a hypothetical one percent contribution of leachate to perched water can not be detected unless the ion concentration in the leachate exceeds that in the perched water by at least an order of magnitude.

Action: None required.

136. Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section #: 4.5 Page #: 4-35 Line #: 21 Code: C
Original Comment #: 120

Comment: The text should also indicate that the trend analysis procedures chosen for the facility will include the specification of statistically-based action levels for each monitoring horizon.

Response: Section 4.6.1 references the use of control charts, which are used to establish statistically based action levels. DOE recommends that text be updated to reflect OEPA's recommendations identified in 2003 Site Environmental Report Comments. Per OEPA's recommendation, in the interim until such a time that a properly formulated, statistically appropriate data analysis strategy can be established, DOE will use arbitrarily specified control limits (such as 75 percent of the FRL) in conjunction with flow data in leak detection evaluations. DOE will continue to review statistical methodologies/tools to be used in future leak detection evaluations. Instead of statistically based action levels, DOE proposes that OEPA's recommendation be implemented.

Action: If OEPA agrees that this recommendation, then the text in the OSDF GWLMP will be updated as stated above in the next revision.

137. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.0 Page #: Line #: NA Code: C
Original Comment #: 121

Comment: Many activities mentioned in this Plan will occur over the next several years:

- Pump operating level for the Permanent Lift Station (Section 4.5.2.1)
- Selection of statistical method after baseline data collection (Section 4.6.1)
- Cell specific technical memoranda (Section 6.1)
- Additions and deletions to the indicator parameters list (Section 4.4.3)

The schedule for these activities, the deadline for the various reports and the responsible DOE party (FCP or Legacy Management) is not clear. A listing of future activities, the reports or plans which govern them, and a schedule for completion would be helpful.

Response: (Section 4.5.2.1) As noted in this section, the pump operating level will be defined after the last cell is capped. Cell 8 is scheduled to be capped in 2006 so the pump operating level will be defined then, if necessary.

It is currently planned that leachate will be treated in CAWWT as long as CAWWT is available, so the pump operating level will probably be maintained at its' current level until CAWWT is no longer available.

(Section 4.6.1) As indicated in Comment Response # 136, DOE proposes that OEPA's recommendation, which was made in 2003 Site Environmental Report Comments, be implemented and that text be updated to reflect this change.

(Section 6.1) It is anticipated that technical memorandum for Cell 4 and 5 will be transmitted later in 2005. Data is currently being reviewed from Cell 4 and 5; however, DOE would like to get approval from OEPA regarding the matter of using their recommendation of using a percentage of the FRLs as action limits. It is anticipated that Cells 6 and 7 technical memoranda will be available in 2006 based on data availability and data quality. The date for the Cell 8 technical memorandum will be contingent upon the installation of the two wells on the southern side of Cell 8.

(Section 4.4.3) This section pertains to parameter list modifications. Parameter list modifications are primarily recommended as part of the technical memoranda. It is anticipated that during the development of the technical memoranda (based on the schedule indicated above), that modifications to parameter lists will be recommended.

Currently transition activities are being defined; therefore, it has not yet been determined which DOE office will be responsible for the various activities identified above.

Action: Upon approval of the response, updates will be provided in the next revision of the GWLMP scheduled for submission to the EPA and OEPA in early 2006.

138. Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Table 6-1 Page #: 6-3 Line #: step 1 actions Code: C
Original Comment #: 122
Comment: The correct mailing address for the Ohio EPA is:
Director, Ohio Environmental Protection Agency
122 South Front Street
Columbus, OH 43215
Response: DOE acknowledges the comment.
Action: DOE will correct the address corresponding to Ohio EPA in Table 6-1 in the final version of Revision 1 to be submitted in February 2005.

139. Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section #: App. B Page #: 4 Line #: 29 Code: C
Original Comment #: 123
Comment: The text states that 12 samples will be used to establish baseline parameters. Fewer samples can be used. As noted in EPA's 1992 addendum to interim final guidance for statistical analyses of groundwater data, a minimum of eight samples can be used for this purpose.
Response: DOE acknowledges the comment. As indicated in Section 3.2.1.4 baseline monitoring at the Fernald site has continued after initiation of waste placement and during active cell operations in order to collect sufficient data to perform the required statistical analyses due to construction schedules.

The Ohio Hazardous Waste regulations do not specify a frequency for determining a baseline dataset. A typical statistical test for a hazardous waste disposal facility requires an up- versus downgradient comparison of background water quality to downgradient water quality. The Ohio Hazardous Waste regulations do require a performance standard for establishing background; OAC 3745-54-97(G) states that the number and kinds of samples taken to establish background be appropriate for the statistical test employed. Experience/technical knowledge gained from monitoring Cells 1 through 3 have indicated that it is necessary to collect baseline samples either monthly, bimonthly, or quarterly in order to have enough data (i.e., 12 samples) to perform statistics on a standardized frequency dataset. The baseline frequency is selected to develop an appropriate statistical procedure, to

accommodate OSDF construction schedules, and to compensate for the varying temporal conditions in the groundwater flow direction and chemistry due to the remedial action and seasonal fluctuations.

Additionally, it should be identified that in Revision 0 of the plan (Section 4.4.1. Establishment of Pre-Waste Placement "Baseline" Conditions), there was a statement that said, "Based on the current understanding of pre-existing levels of contaminants in the OSDF subsurface, the FEMP is electing to perform up to 12 rounds of baseline sampling (prior to waste placement) for both the perched system and Great Miami Aquifer for all of the site-specific analytical parameters specified in Section 4.5." This statement was eliminated in Revision 1- draft; however, when Revision 1 is finalized, a similar statement will be added back in with the caveat about baseline extending into waste placement operations.

Action: A sentence will be added in the final version of Revision 1 to be submitted in February 2005 that "Based on the current understanding of pre-existing levels of contaminants in the OSDF subsurface, the Fernald site is electing to perform up to 12 rounds of baseline sampling for both the perched system and Great Miami Aquifer for all site-specific analytical parameters."